G.B.C.

CALENDAR 1974–1975

587-5.(01)
S1.1

LEHMANN BOOKBINDING LTD.

CUSTOMER George Brown College Archives

DATE SENT 1980-03-07 | ITEM | LIST

COLOUR NO. PW 303 | SPINE LETTERING: GOLD / BLACK / WHITE (WHITE)

[X] BIND AS IS
1

COLLATING INSTRUCTIONS | VERTICAL | PRINT: HORIZONTAL

COVERS
- [ ] REMOVE ALL
- [X] LEAVE ALL IN PLACE
- [ ] BIND IN FRONT EACH ISS
- [ ] BIND IN FRONT EACH ISS

VERTICAL: G.B.C. Calendar 1974-1975

PRINT: TITLE

- [ ] REMOVE ADS
- [ ] LEAVE ADS
- [ ] TITLE PAGE TO FRONT
- [ ] T.P. BACK WITH INDEX

TABLE OF CONTENTS
- [ ] BIND IN FRONT
- [ ] LEAVE WITH EACH

INDEX
- [ ] BIND IN BACK
- [ ] BIND IN FRONT

STAMPING
- [ ] FIRST TIME BOUND
- [ ] FOLLOW SAMPLE BOOK
- [ ] FOLLOW SAMPLE SPINE
- [ ] FOLLOW SAMPLE RUB

- [ ] POCKET

SPECIAL INSTRUCTIONS

Note folds in Addenda

THE GEORGE BROWN COLLEGE OF APPLIED ARTS AND TECHNOLOGY

Calendar 1974-75

THE GEORGE BROWN COLLEGE OF APPLIED ARTS AND TECHNOLOGY

PROGRAMS 1974 - 1975

The content of this publication is intended to serve as a guide only. The George Brown College of Applied Arts and Technology reserves the right to delete or alter the contents of this publication in any way and without notice.

This College was established and is funded by the Province of Ontario through the Ministry of Colleges and Universities.

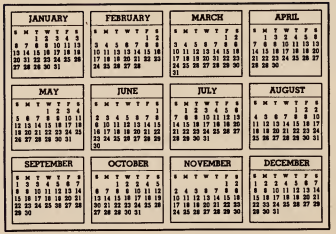
The George Brown College of Applied Arts and Technology, P. O. Box 1015, Station B, Toronto, Ontario, M5T 2T9, Canada. Telephone (416) 967-1212.

THE GEORGE BROWN COLLEGE CALENDAR OF EVENTS

1974

January	1	New Year's Day: College Closed
January	2	First day of second semester
January	3	Fees due for winter semester
January	7	First registration night: part-time courses
January	9	First night of classes: part-time courses
February	25	Registration: apprenticeship programs
April	1	First registration night: part-time courses
April	12	Good Friday: College closed
April	15	Easter Monday: College closed
April	22	Registration: apprenticeship programs
April	26	Completion of two-year technician programs
May	16	Awards Night
May	20	Victoria Day: College closed
June	14	Completion of regular Post-Secondary Year
June	17-28	Registration for summer courses
June	21	Completion of apprenticeship programs
July	1	Canada Day: College closed
July	2	Summer courses begin
July	26	Completion of two-year technologist programs
August	1	Pre-registration part-time courses
August	5	Civic Holiday: College closed
August	26	Last day: Summer courses
September	2	Labour Day: College closed
September	3	Registration: apprenticeship and short programs
September	4,5,6	Registration: post-secondary
September	9	Post-secondary classes commence
September	16	First registration night: part-time courses
September	30	First night of classes: part-time courses
October	14	Thanksgiving Day: College closed
October	28	Registration: apprenticeship programs
December	20	Last day of first semester, 1974
December	21 to	
January	1	Post-secondary Christmas break
		Manpower holiday dates to be released later

1974



1975

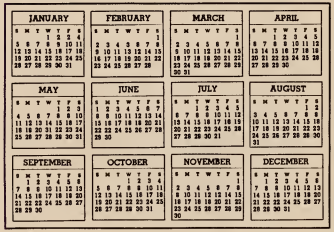


TABLE OF CONTENTS

	Page
GENERAL INFORMATION	
Academic Upgrading	11
Accommodation, Living	19
Additional Expenditures	14
Admission Procedures	11
Admission Requirements	12
Advanced Standing	12
Applicants from Foreign Countries	13
Athletics & Recreation	18
Bookstores	19
Cafeterias	19
Campus Facilities	19
Campuses	10
Coding Usages, Significance of	21
College, The	10
Counselling Services	18
Equivalent Standing	14
Fees, Student Activity	19
Fees, Tuition	13
Financial Assistance	18
Glossary	17
Grade Point Average (GPA)	16
Grading	15
Health Centres	18
Identification Cards	13
Libraries	20
Living Accommodation	19
Mature Students	12
Mutual Responsibility Agreement	13
Ontario Health Insurance Plan (OHIP)	19
Ontario Manpower Retraining Programs (OMRP)	14
Parking	20
Placement	19
Priority of Admissions	12
Probationary Status	11
Program Evaluation	15
Programs of Study	10
Promotion of Students	16

GENERAL INFORMATION - Cont'd	Page
Registration Dates	15
Report, The Student	16
Student Activity Fees	19
Student Organizations	19
Student Report, The	16
Student Services	18
Technology Program, The 2700 - Hour	20
Transfer Credits	12
ACADEMIC STUDIES	
Academic Upgrading	22
Basic Training for Skill Development (BTSD)	22
APPLIED ARTS	
Addiction Counsellor	23
Child Care Worker	25
Day Care Worker	26
Dental Assistant	27
Dental Technician	28
Denture Therapy	24
Hospital Orderly	29
Nursery Aide	29
ARCHITECTURAL TECHNOLOGY	
Air Conditioning Technician	30
Appliance Servicing	31
Blueprint Reading	31
Carpentry - General	31
Civil Engineering Technician	32
Concrete Technician	33
Construction Technician	35
Drafting	36
Drafting Refresher	36
Drafting Technician - Architectural	37
Drafting Technician - General	38
Drafting Technician - Mechanical Services	39
Drafting Technician - Structural	40
Dry Wall Taper	36
Heating Technician	41
Oil Burner Servicing	41
Painting & Decorating	42
Refrigeration & Air Conditioning	42
Residential Metal Siding Installation	42
Stationary Engineering	43
Survey Technician	44
Survey Technologist	45

Page

BUSINESS & COMMERCE

Accounting ---------- 47
Business Administration ---------- 48
Business Administration - General ---------- 49
Business Machines ---------- 50
Business Machines & Bookkeeping ---------- 50
Clerk Typist ---------- 51
Commercial Accounting ---------- 51
Commercial Clerical ---------- 52
Commercial Dicta-Typist ---------- 52
Commercial Refresher ---------- 52
Commercial Stenographic ---------- 52
Court Reporting ---------- 53
Electronic Data Processing ---------- 54
Electronic Data Processing I (Keypunch) ---------- 55
Inventory Control ---------- 55
Marketing ---------- 56
Physical Distribution ---------- 57
Sales ---------- 58
Secretarial Science - General ---------- 59
Secretarial Science - Legal ---------- 60
Secretarial Science - Medical ---------- 61
Stenographic Refresher ---------- 55
Typing Refresher ---------- 55

ELECTRICAL/ELECTRONICS

Acoustics Technician ---------- 63
Colour Television ---------- 71
Design Technician - Electrical ---------- 65
Electrical Technician ---------- 67
Electrical Technologist ---------- 69
Electronics General ---------- 71
Electronics Technician ---------- 72
Electronics Technologist ---------- 74

ENGINEERING TECHNOLOGY

Blueprint Reading for Welders ---------- 76
Business Equipment Servicing ---------- 76
Coatings Technician ---------- 77
Industrial Instrumentation Mechanic ---------- 78
Industrial Instrumentation Technician ---------- 79
Industrial Instrumentation Technologist ---------- 80
Lathe Operator ---------- 82
Machine & Product Design ---------- 83
Machine Shop Practice ---------- 82
Materials Handling Design ---------- 85
Mechanical Engineering Drafting ---------- 86
Operator - Thermoplastic (Forming & Fabricating) - 88
Operator - Thermoset (Hand Lay-up) ---------- 87

Page

ENGINEERING TECHNOLOGY - Cont'd

Operator - Thermoset (Machine Moulding) ---------- 87
Orthotic - Prosthetic Techniques ---------- 89
Plastics Technician A ---------- 91
Plastics Technician B ---------- 92
Plastics Technician C ---------- 93
Precision Instrument Techniques ---------- 95
Process Piping Design ---------- 96
Set-up Man - Thermoplastic ---------- 88
Tool & Die Design ---------- 97
Toolmaking Technician ---------- 99
Watchmaking ---------- 100
Welder Fitter ---------- 101
Welder Fitter Refresher ---------- 101
Welding Operator ---------- 102
Welding Specialist ---------- 102

FASHION TECHNOLOGY

Apparel Design & Pattern Drafting ---------- 103
Apparel Technology ---------- 104
Creative Fashions (Apparel) ---------- 107
Custom Dressmaking & Alterations ---------- 113
Fur Business & Manufacturing Techniques ---------- 114
Furniture Renovation Technician ---------- 115
Furniture Refinishing & Repair ---------- 117
Furniture Upholstery & Repair ---------- 117
Hairstyling for Barbers ---------- 118
Industrial Power Sewing ---------- 118
Jewellery Arts ---------- 119

FOOD TECHNOLOGY

Baking Pre-employment ---------- 121
Bartending ---------- 121
Chef Training Pre-employment ---------- 122
Cook Training ---------- 122
Dietary Services Administration ---------- 123
Dining Room Service ---------- 124
Food Administration ---------- 125
Food Processing Technology ---------- 126
Hotel-Motel Administration ---------- 127
Retail Meat Cutting ---------- 124
Ship's Cooks ---------- 135

GRAPHIC ARTS

Commercial Art ---------- 128
Film Imposition & Printing Surface
Preparation for Typographers ---------- 128
Graphic Arts (Printing Technician) ---------- 129

Page

GRAPHIC ARTS - cont'd

Graphic Design Technician ---------- 131
Offset Printing ---------- 132
Offset Printing for Letterpressmen ---------- 132
Photocomposition & Paste-up
Assembly for Typographers ---------- 133
Photo Reproduction for Typographers ---------- 133
Screen Printing ---------- 134
Signwriting ---------- 134

LANGUAGE TRAINING

English as a Second Language ---------- 135

NURSING ---------- 136

PHYSICAL EDUCATION

Fitness Instructor ---------- 137

OTHER SKILL PROGRAMS

Certified Building Custodian ---------- 138
Commercial Vehicle Driving ---------- 138
Tractor Trailer Driving ---------- 138

APPRENTICESHIP PROGRAMS

Air Conditioning & Refrigeration Worker ---------- 139
Baker ---------- 139
Barber ---------- 139
Brick & Stone Mason ---------- 139
Carpenter (General) ---------- 139
Cement Mason ---------- 139
Chef ---------- 139
Electrician (Construction & Maintenance) ---------- 139
Electronics Mechanic (Industrial Control) ---------- 139
Glazier & Metal Mechanic ---------- 139
Hairdresser ---------- 139
Ironworker ---------- 139
Lather ---------- 139
Machinist ---------- 139
Millwright ---------- 139
Painter & Decorator ---------- 139
Plasterer ---------- 139
Plumber ---------- 139
Radio & TV Service Technician ---------- 139
Retail Meat Cutter ---------- 139
Sheet Metal Worker ---------- 139
Sprinkler & Fire Protection Installer ---------- 139
Steamfitter ---------- 139
Structural Steel Draftsman ---------- 139
Toolmaker ---------- 139
Watch Repairer ---------- 139

Page

COURSE DESCRIPTIONS ---------- 140

INDEX - GENERAL INFORMATION ---------- 240

INDEX - PROGRAM INFORMATION ---------- 242

THE GEORGE BROWN COLLEGE OF APPLIED ARTS & TECHNOLOGY

THE COLLEGE

On March 1, 1968, the George Brown College of Applied Arts and Technology was officially named; it comprised the former Provincial Institute of Trades and the former Provincial Institute of Trades and Occupations. It is fitting that the College, whose programs for the first time offer the post-secondary student an exciting and universally accessible alternative to a university education, should receive its name from George Brown, the Reformer, whose continuing fight was against the social prejudice of the time and an established elite, bent on withholding from the common man his rightful freedom to shape his own destiny, both political and personal. It is appropriate also that, 124 years to the day after the founding of that mighty organ of free speech, the Globe, this College should derive its name from the man whose very voice and footsteps must have been well-known to the sod on which our downtown campus stands!

THE CAMPUS

In December, 1969, the Board of Governors of the George Brown College adopted a master plan; this plan was based on the concept of a multi-campus college, with programs integrated to satisfy the needs of the community.

At present the College operates nine campuses, five of which are nursing campuses, located within the City of Toronto. A new complex of buildings has just been completed at the Casa Loma site. It is expected that, within two or three years, the entire College operation will be settled in three areas: the Casa Loma Campus, the Kensington Campus and a downtown campus.

PROGRAMS OF STUDY

The George Brown College offers almost 200 programs leading to vocational competence, official certification, academic upgrading, and general enrichment. While it is acknowledged that certain standards of proficiency in particular areas of study are necessary for employment, it is also recognized that each student brings to the College certain established abilities, and that individual needs vary widely. This Calendar describes programs and component courses of study which lead to particular vocations; most students are likely to undertake one of these prescribed programs; yet some may choose to take advantage of the high degree of flexibility provided and arrange one of the following variations:

1. Take an enriched program by adding to it another course.
2. Take a light program by omitting one or two courses.
3. Substitute courses for those within a program for which exemption or credit has been granted.
4. Take one or two courses at a time, with a view to building program credit and certification; part-time courses are the most popular way of doing this and a calendar is available from the College on request.

A diploma is issued on satisfactory completion of a program of 4 semesters or more in length: a certificate is issued for programs less than 4 semesters in length.

In order to meet the changing needs of the community, new programs are constantly being developed and current courses revised and updated. As is the case in all post-secondary institutions, all programs are subject to change without notice and will be given only if there is sufficient enrolment. The College also reserves the right to suspend or cancel any course or program, when enrolment is insufficient or employment opportunities appear inadequate.

ADMISSION PROCEDURES

Secondary school students intending to enter the George Brown College are advised to consult, during the fall term, with a guidance counsellor, who will supply information and application forms.

The general public may obtain information and application forms by writing to the George Brown College, P. O. Box 1015, Station B, Toronto, Ontario, M5T 2T9, or by telephoning (416) 967-1212 and asking for 'Information'.

Application forms must be accompanied by ONE of the following documents:

1. An official transcript of all secondary school marks, showing the necessary credits and grades for admission to the desired program.

OR

2. A statement from the secondary school principal stating that the applicant is expected to obtain the necessary credits and grades for admission to the desired program; this statement must be confirmed by an official transcript of marks, when it becomes available.

Applicants frequently write to obtain additional information, but neglect to mention the name of the program applied for; to ensure a prompt reply, an applicant should state the name of the program each time he communicates.

Applications are assessed by a Board of Admissions, who are empowered to accept, defer, or reject any candidate's application for admission to any program, or to recommend an alternate program for any candidate whose qualifications, in the opinion of the Board, are not adequate to satisfy the demands of the program which the candidate wishes to pursue.

Academic Upgrading

Students who are otherwise acceptable for a program, except that they do not have standing in all of the required academic subjects, may apply at the George Brown College for college preparatory courses in the subjects they are lacking; these preparatory courses are available throughout the entire year and further information may be obtained by telephoning the information service of the College.

Probationary Status

Students whose applications have been accepted but whose qualifications fall somewhat short of the published prerequisites for a program, as well as students who have been re-admitted after a failure (a grade point average

of less than 2.0) are placed on probationary status. A probationary student's position will be re-assessed by the end of the first semester. For more detailed information, apply to the campus admissions office.

Transfer Credits

Students who wish to have courses successfully completed at other institutions credited to their program at the George Brown College must apply in writing to the campus admissions office by the end of the first week of their program; such work will be evaluated and credited to their program, when applicable.

ADMISSION REQUIREMENTS

1. Programs of Two Years or Longer

The Ontario Secondary School Graduation Diploma is the minimum admission requirement. Applicants from other provinces and other countries must submit evidence of equivalent standing. Certain programs require a personal interview, demonstration of special talents, or proof of acceptable standing in specific subjects.

2. Programs of One Year or Less

(a) As stated in the program description.

(b) Many of the programs in this category are available under the provisions of the Ontario Manpower Retraining Program, a government-subsidized educational program for adults; such programs are designated by the GBC code in the 500 series. Application for programs under the provisions of the Ontario Manpower Retraining Program must be made through the Canada Manpower Centre closest to the applicant's home address.

3. Admission as a Mature Student

Applicants 19 years of age or older, who do not have the stated admission qualifications but who appear to possess the capacity and maturity to succeed, may be accepted in an appropriate program as probationary students.

4. Admission with Advanced Standing

The College may grant advanced standing for college-level study completed at other accredited institutions. Applicants' requests for advanced standing must be supported by official transcripts from the institution where the standing was obtained and should be submitted simultaneously with the application for admission to the George Brown College.

5. Priority of Admissions

Applicants will be admitted in the following order of preference:

1. Permanent residents of Ontario.
2. Permanent residents of other Canadian provinces.
3. Overseas students from Commonwealth countries.
4. Students from foreign countries.

6. Applicants from Foreign Countries

Applicants other than Canadian citizens and landed immigrants are not eligible for apprenticeship programs and are not eligible for Ontario Manpower Retraining Programs.

Students from foreign countries are eligible to apply for any post-secondary program offered by the College, although pre-selection interviews and other factors may preclude consideration of non-resident applicants for certain programs. If the foreign applicant's mother tongue is not English, then proof of proficiency in English must be presented by submitting the results from either the Michigan English Language Test or the Test of English as a Foreign Language. After the student has received a letter of acceptance from the George Brown College, he must obtain a student visa; this may be accomplished by obtaining a student application for temporary admission to Canada from the Canadian embassy or consulate in the applicant's country, or by writing to the Department of Manpower and Immigration, Immigration Division, Ottawa, Canada, K1A 0J9.

In addition to good character, good health, and proof of acceptance into the George Brown College, immigration authorities must be provided with evidence of sufficient funds to pay living and school expenses for at least one year. The George Brown College cannot assume financial responsibility for students whose funds prove inadequate. Student visa holders should not count on part-time or summer employment in Canada to pay for school expenses. Immigration regulations stipulate that students in Canada with only temporary status cannot accept employment without written permission from their immigration officer.

7. Identification Cards

Identification cards, which may be used as proof of enrolment in the George Brown College, are issued to students at the time of registration.

8. Mutual Responsibility Agreement

The acceptance of a student at the George Brown College of Applied Arts and Technology constitutes an agreement of mutual responsibility. The student's part of the agreement is to accept established College rules and practices, to respect the laws of the City and the Province, and to act in a responsible manner appropriate to these rules, practices, and laws. The College's part is to provide an environment that encourages student growth and development. The College recognizes that most students accept and fulfil their part of the agreement. When a student is persistently irresponsible, however, disciplinary action must be taken on the part of the College.

FEES

POST-SECONDARY PROGRAMS (See also page 19)

The normal academic year consists of two semesters. The fee schedule for all programs is as follows:

First semester	Confirmation	$ 35
	Balance of tuition	100
Total of first semester fee		$ 135

Second semester ..... Tuition ..... $ 125

Total for academic year ..... $ 260

The first semester confirmation fee of $ 35, which includes a $ 10 registration fee, must be paid within 14 days of notice of acceptance; it guarantees the student a place in the program and is not refundable. The balance of the first semester tuition fee must be paid in full before the student is permitted to register or to enter classes.

The second semester fee must be paid in full before the end of the first semester.

Applicants from countries other than Canada are required to pay the total fees for the complete academic year two months in advance of the program's registration date; these fees, which include a $ 35 non-refundable confirmation fee, amount to $ 260 (e.g., fees must be paid by July 1st for September 1st registration).

All fees must be paid in cash, by money order or by cheque made payable to the George Brown College.

There will be no refunds after the tenth day of scheduled classes.

This fee schedule is subject to revision without notice.

Fees for programs of less than one normal academic year are calculated on a pro rata basis; information about fees for such programs may be obtained from the admissions office.

ADDITIONAL EXPENDITURES

The cost of textbooks, instruments and supplies is additional to the tuition fee and varies, according to the program, from $ 40 to $ 100. Students are urged to use the facilities of the campus bookstore where items are sold on a non-profit basis.

Students who wish to keep projects constructed in the College must pay for the materials.

ONTARIO MANPOWER RETRAINING PROGRAMS

Eligible persons may apply for enrolment in programs designated by the GBC code in the 500 series, as fee-paying students, on the basis of $ 5 per week. These fees are payable one month in advance, in payments of not less than $ 20; such fees are subject to alteration, in keeping with change in government policy.

These fees are not refundable.

Books and supplies for these programs are on loan at no cost to the student.

EQUIVALENT STANDING

Applicants from another province or country are required to submit evidence of equivalent standing. The following certificates are recognized as being equivalent to the Ontario Secondary School Graduation Diploma and may be accepted if applicants satisfy the other admission requirements:

British Columbia:	Junior Matriculation (Grade 12)
New Brunswick:	Junior Matriculation (Grade 12)
Alberta:	Junior Matriculation (Grade 11)
Saskatchewan:	Grade 11
Manitoba:	Grade 11
Quebec:	Quebec High School Leaving or McGill Junior Matriculation
Nova Scotia:	Junior Matriculation (Grade 11)
Prince Edward Island:	First Class Licence of Second Year Certificate of Prince of Wales College
Newfoundland:	Grade 11

REGISTRATION DATES

The calendar of events at the front of this publication gives the normal dates of registration and class commencement; however, certain programs may have more than one commencement date during the year; for such information, telephone (416) 967-1212. Students may pre-register at any time after receiving their notice of acceptance and are encouraged to do so since it will give them the opportunity to consult with their teaching divisions concerning their programs.

GRADING

The following system of grading is used to indicate the quality of a student's work:

Grade	Meaning	Point Value
A	excellent	4
B	good	3
C	average	2
D	below the average	1
F	failure	0
WP	withdrawn while passing	
WF	withdrawn while failing	
K	incomplete	

A course in which a student has failed must be repeated, if credit is desired. The grade of K is given only in cases of illness or other extenuating circumstances; it permits the student, after consultation with the department head, to complete the work within a reasonable period of time.

PROGRAM EVALUATION

It is generally conceded that, in a program of study, some courses are more important than others in reaching the program's goal. For example, in the watchmaking program, the course which teaches watchmaking skills is likely a much more important course in the training of a watchmaker than the small business management course; and yet both courses are important. In assessing a student's progress in the watchmaking program, then, it would not be right to assign the same value to small business management as to watchmaking skills. In fact, the experts assign to watchmaking skills a value symbolized by the number 12 but to small business management a value symbolized by the number 2. The name attached to the number 12 and the number 2 is credit units. A credit unit, therefore, is a number used to indicate a course's relative value or weight in the program.

Each course is assigned a credit unit value related to the number of teaching hours per week, the amount of practical training time, and perhaps other factors. For example, in the electronic data processing program, the course known as EDP 101 Introduction to COBOL is assigned a value in the program of 4 credit units. The point value of the grade achieved by a student is multiplied by the number of credit units to determine grade points: e.g.,

EDP 101 - Grade achieved B
Point value of B is 3
Grade points = 3 (point value of B) x 4 (credit units) = 12

The total grade points earned in all courses divided by the total credit units for all courses yields the grade point average for the program.

GRADE POINT AVERAGE

The grade point average is used to assess performance in a program. To determine the grade point average (GPA), divide the total grade points by the total credit units of the program.

$$GPA = \frac{\text{Total Grade Points (see glossary)}}{\text{Total Credit Units}}$$

A minimum grade point average of 2.0 is needed to complete a program successfully. Students may repeat courses in which a failing grade (F) or a below-the-average grade (D) has been scored. Honour standing may be awarded to students who attain a grade point average of 3.5 or more, with approval of the chairman of the division.

THE STUDENT REPORT

Suppose that Alice Albright has completed 6 weeks of the 12-week typing refresher program. Here is her student report:

	Grade	Point Value		Credit Units		Grade Point
Typing	A	4	x	8	=	32
Language & Communication	B	3	x	6	=	18
Office Practice	C	2	x	3	=	6
Business Machines	C	2	x	3	=	6
				20		62

Grade Point Average = $\frac{62}{20}$ = 3.1

Alice has achieved a highly satisfactory average.

PROMOTION OF STUDENTS WHO HAVE FAILED ONE OR TWO COURSES

1. A student who has failed a course is permitted to pursue in the following year the courses he has successfully completed.

2. A student with a grade point average of 2.5 or more may apply to pursue one failed course in the following year.

3. A student with a grade point average of 3.0 or more may apply to pursue two failed courses in the following year.

4. A student may modify a standard program by making application for enrolment in his own selection of courses. On successful completion of any course, a certificate will be issued; however, a student receiving any number of such certificates will not receive a diploma until he has completed a prescribed program.

GLOSSARY

1. Certificate: a document certifying the successful completion of a prescribed program less than 4 semesters in length.

2. Course: a teaching-learning unit, several of which comprise a program.

3. Credit unit: a number used to indicate a course's relative value or weight in a program.

4. Core courses: compulsory courses within a prescribed program.

5. Diploma: a document certifying the successful completion of a prescribed program of 4 semesters or more in length.

6. Elective: a course which a student may choose for study.

7. Endorsement: credits for additional courses taken in addition to the prescribed program; the credit appears on the face of the certificate or diploma earned.

8. Grade points: the product of the grade point value x the credit units.

9. Grade point average (GPA): the quotient derived when total grade points earned are divided by total possible credit units. Courses for which exemptions have been granted are not included in the calculation of the GPA.

10. Hour: one period on the timetable.

11. Options: alternative courses within a prescribed program; under certain circumstances, options and/or electives may be chosen, with the recommendation of the department chairman.

12. Program: a teaching-learning unit composed of several courses.

13. Semester: a course length of 14 to 26 weeks.

14. Session: a course length of less than 14 weeks.

STUDENT SERVICES

The student services office administers a wide variety of activities directly related to students' well-being; these include a health centre on each campus, athletics and recreation, counselling services, financial assistance, living accommodation, OHIP, placement, and student organizations.

A HEALTH CENTRE is located on each campus, staffed by registered nurses, with a physician available for consultation on an appointment basis. Students are requested to complete a health history form, and medical examinations are required for admission to some programs.

Services available include health counselling, health education programs, emergency care, supportive care following minor injuries and illness, immunization against tetanus, poliomyelitis and smallpox; and referrals to medical facilities, campus counselling services, or community agencies.

Free chest x-ray facilities are provided by the Toronto Chest Clinic for students who have not had a recent chest x-ray or tuberculin test; forms and detailed information are available at the campus health centre.

ATHLETICS is a program in which every student is eligible to participate. The athletic director operates an intramural program of inter-class competitions involving touch football, floor hockey, basketball, pushball, baseball, etc. The College, as a member of the Ontario Colleges Athletic Association, competes in various inter-college sports, such as basketball and soccer.

The athletic department also organizes a variety of recreational club programs such as the scuba club, the archery club, the table-tennis club, the curling club, the tennis club, the yoga club, etc. Clubs for any athletic activity may be organized by calling a meeting of interested students, electing officers, and submitting a constitution to the athletic director for approval.

All students who participate in intramural or inter-college athletics are reminded of their responsibility to provide their own medical and hospital insurance coverage, under the provisions of the Ontario Health Insurance Plan. The College provides supplementary coverage for specific injuries, under a special insurance policy.

COUNSELLING SERVICES are provided on each campus. Professional counsellors are available at any time during school hours to meet with any student on a voluntary basis. They are competent to provide educational, vocational or personal counselling. Discussions are informal, confidential and supportive of the student. For further information contact the counselling centre at any campus or phone 967-1212.

FINANCIAL ASSISTANCE under the terms of the Ontario Student Awards Program or of the Canada Student Loans Plan may be available for applicants for admission to a post-secondary program, who are Canadian citizens or landed immigrants, having resided in the country for at least 12 consecutive months prior to enrolment. Loans awarded under the Plan are interest-free until six months after graduation or termination of study, and no repayment is required as long as the recipient is enrolled as a full-time student. Further information and application forms for student financial assistance are available at all secondary schools and from the Student Services Office, telephone 967-1212.

LIVING ACCOMMODATION information is available by dialling (416) 967-1212. Although residence accommodation is not provided by the College, there is no shortage of boarding and rooming facilities in Toronto; in the fall of 1973 rates varied from $ 25 to $30 per week for room and board.

ONTARIO HEALTH INSURANCE PLAN (OHIP) coverage is the responsibility of each student; students without such coverage must be prepared to pay all medical and hospital costs arising from illness or injury; such expenses can amount to $ 75 to $ 100 per day. Information and forms are available at the campus health centre. Until students are eligible for the Ontario Health Insurance Plan, they are urged to make arrangements for coverage with private insurance companies.

PLACEMENT in employment is primarily the decision of the student. However, the College recognizes its role in assisting students and alumni to make correct career choices and in bringing graduates and employers together.

A close liaison with business, industry and the community is maintained by the College staff. Students are advised of employers looking for their services and employers are advised of the capabilities of graduates. Presentations and interviews may be arranged on campus or at the employer's location.

The campus libraries contain career information which enables students to familiarize themselves with employer requirements and operations. Publications on resume writing and interview preparation are also provided.

STUDENT ORGANIZATIONS exist on each campus; they are self-governing and provide a variety of services such as the following:

1. The creation of a forum for free discussion and democratic exchange of ideas.
2. The provision of a ready channel for communication to administration of student requests or grievances.
3. The organization of student activities and services.

A college-wide council composed of representatives of each campus meets periodically to deal with matters of an inter-campus nature and to serve as an advisory committee to the college administration.

STUDENT ACTIVITY FEES are at present under consideration; if authorized, they will be of the order of $10 - $15 per annum, payable with the registration fee.

CAMPUS FACILITIES

A BOOKSTORE is operated on each campus on a non-profit basis to all students. All course requirements of books, stationery, and supplies may be purchased at prices usually well below those at retail stores. Besides these items, the bookstores sell sweaters, jackets, college rings, and a few souvenir articles. All purchases must be made in cash and personal cheques are not accepted.

A CAFETERIA is located on each campus and is open Monday through Friday. Both hot and cold dishes are available from October to May. During the summer months, a more limited service is provided.

A LIBRARY is located on each campus. The aim of the library is to provide a carefully chosen collection of material related to the growing range and complexity of college programs; such materials include a selection of periodicals and reference journals, as well as magazines for browsing. Library hours on each campus are posted in the library area.

Students are invited to use the library facilities at any time during these hours for reference, borrowing, study, or relaxation.

PARKING space is not provided for students by the College. Students are urged to travel by GO train or T. T. C. buses and subway, whenever possible. Transportation on the GO trains is available at reduced rates for students in full-time attendance for more than 12 consecutive weeks; further information may be obtained by telephoning (416) 248-3112 or consulting the campus admissions office. The cost of a one-way T. T. C. ticket, which permits passage anywhere in Metropolitan Toronto, is 25 cents.

THE 2700-HOUR TECHNOLOGY PROGRAM (3 YEARS IN 2)

1. Length of Program: 2700 hours (6 modules of 15 weeks)

2. Admission Requirements: The Ontario Secondary School Diploma with standing above the average in mathematics and science.

3. Program for academic years 1973/74
   1974/75

   1973/74

Module 4 & 1	September 10/73 -	December 21/73
Module 5 & 2	January 2/74 -	April 12/74
Module 6 & 3	April 15/74 -	July 26/74

   1974/75

Module 1 & 4	September 9/74 -	December 20/74
Module 2 & 5	January 2/75 -	April 18/75
Module 3 & 6	April 21/75 -	August 1/75

4. Module 1 is common to the technician and the technologist programs. Outstanding performance in the first module may qualify technician students to transfer to the technology program for the second module; technology students who do not achieve technologist standing may transfer to the technician program. Note that there are two distinct programs:

   (i) The technician program with one set of admission requirements.
   (ii) The technologist program with a set of higher admission requirements.

5. The 'three years in two' option applies to the following programs: Electrical Technology, Electronics Technology, Instrumentation Technology, and Survey Technology.

6. Upon satisfactory completion of the technologist program, a student will receive the George Brown College Diploma indicating proficiency in the technology concerned.

THE GEORGE BROWN COLLEGE OF APPLIED ARTS & TECHNOLOGY

SIGNIFICANCE OF CODING USAGES

PROGRAMS (e.g., AP101, B545)

One or two letters denote DIVISION.

Three figures denote PROGRAM, with the following significances:

100 - 199: Post-Secondary

500 - 599: Manpower

600 - 699: Apprentice

700 - 799: Special

Note: Existing program numbers (1-99) will be retained within the hundred ranges: .g., EL41 (a manpower program) becomes EL541.

COURSES (e.g., MATH100, WELD911)

Up to four letters denote SUBJECT

Three figures denote LEVEL and/or TYPE of course with the following significances:

100 - 499: Post-secondary, by level

500 - 599: Manpower

600 - 699: Apprentice

700 - 799: Other (e.g., fully sponsored courses; T.I.B.I.)

800 - 899: Part-time, general interest (Form E)

900 - 999: Part-time, career-oriented (Form D)

Notes: 1. A single letter after the course number will be used for a specifically defined purpose:
e.g., A, B, C, D will denote parts of a course

T will denote a course with increased content appropriate to technology students.

2. Existing course numbers will be retained, except for the hundreds figure:
e.g., Math 10 (an apprentice course) becomes Math 610
Math 130 (a manpower course) becomes Math 530

PROGRAM: Academic Upgrading (Basic Training for Skill Development - BTSD) GBC CODE: AS540, 541, 542, 543

AS540 - a course designed for adults who have had little or no previous schooling. This is the beginning level for adults who wish to advance their education.

- prerequisite is the ability to communicate in spoken English.

College Street Campus, up to 52 weeks Fee: $ 5.00 per week

ENG540 English
MATH540 Arithmetic
30 periods per week

AS541 - a course for adults whose previous schooling was limited to elementary Gr. 4. This is the second level for adults who wish to advance their education.

- prerequisite: AS540 or Gr. 4 equivalent

College Street Campus, up to 52 weeks Fee: $ 5.00 per week

ENG542 Basic English
MATH542 Arithmetic
30 periods per week

AS542 - designed to prepare persons for entry into Colleges of Applied Arts and Technology commercial or technical programs that require the equivalent of Grade 10, or for advancing to AS543

- prerequisite: Grade 8 equivalent or AS541

College Street Campus, up to 52 weeks Fee: $ 5.00 per week

ENG546 Language & Communication
MATH546 Mathematics
SCI546 Physics, Chemistry, Biology
30 periods per week

AS543 - designed to prepare persons for entry into Colleges of Applies Arts and Technology programs that require Grade 12 equivalent. Students successfully completing this program may apply to the Ministry of Education for credit towards a Grade 12 equivalency certificate.

- prerequisite: Grade 10 equivalent or AS542

Teraulay Campus, up to 52 weeks Fee: $ 5.00 per week

ENG547 Language & Communication
MATH547 Mathematics
SCI547 Physics, Chemistry, Biology

NOTE: The foregoing courses are offered on an individualized, continuous-intake basis.

PROGRAM: Addiction Counsellor GBC CODE: AP103
LOCATION: Kensington Campus FEE: $260 per year
LENGTH: 2 years
CERTIFICATION: Diploma
PREREQUISITE: Generally restricted to older students with volunteer welfare experience, post high school work, or both. A good command of English is needed, both verbal and written. The Ontario Secondary School Graduation Diploma or its equivalent is a prerequisite; but those with the ability to cope beyond this level and mature men and women with a good life experience are needed for this emotionally demanding work. Stable energetic people, relatively free from personal problems, who communicate well on a feeling level and who show warmth and empathy, are given the highest preference. Applicants may be drawn from people with widely differing experience: the home, recent school graduation, the ministry, nursing, volunteer work, business, industry and other fields. This program is offered on alternate years; the next admission will be September, 1975.

The process of student selection involves group interviews with both staff and members of the graduating class; while not the determining factor, these interviews are mutually helpful in reaching a decision on admission. Interviews will be conducted from January to May 1975.

All enquiries and requests for interviews should be directed to the Admissions Office, Kensington Campus, P.O. Box 1015, Station B., Toronto, Ontario M5T 2T9. When requesting an interview, please include an autobiographical sketch and indicate why you are interested in taking this program.

Addiction counsellors are trained to be cousellors in the mental health field, with special expertise in problems related to drug (including alcohol) dependencies, and to serve a variety of individuals, agencies, and the community.

FIRST YEAR	Semesters I & II	Hours per week
AD100	Field Practice	16
AD101	Human Growth & Behavior	2
AD102	Group Process	2
AD103	Social Games, Problems & Services	2½
AD104	Physiology & Pharmacology	2
AD105	Basic Studies in Addiction	2
AD106	Theory, Methods & Practice of Therapy	3
AD107	Sociology	2
AD108	Values, Ethics & Professionalism	2
AD110	English (Optional)	2
		35½

PROGRAM: Addiction Counsellor (Continued)

SECOND YEAR	Semesters III & IV	Hours per week
AD200	Field Practice	24
AD201	Human Growth & Behavior	2
AD202	Group Process	2
AD206	Theory, Methods & Practice of Therapy	3
AD207	Sociology	2
AD209	Research & Independent Studies	2
AD211	Community Practice	2
		37

PROGRAM: Denture Therapy
LOCATION: Casa Loma Campus
LENGTH: 2 Years
CERTIFICATION: Diploma
PREREQUISITE: A minimum of the Ontario Secondary School Graduation Diploma or its equivalent with chemistry and physics. Credits in biology will be an asset. The candidate should have or develop a high degree of manual skill and a good command of the English language.

GBC CODE: AP106
FEE: $260 per year

The denture therapist is the new auxiliary of the dental team responsible for the fabrication of all removable prosthetic appliances. This includes taking impressions of all kinds, bite registration, fitting, finishing, and post-insertion adjustments of oral prosthetic appliances. Students in the therapy course will be required to complete the first year in the dental technician program. The second year will be devoted to denture therapy intra-oral, clinical, and laboratory work.

As an integral part of the dental team, the denture therapist must prove to be competent in his specific area, and be very aware of responsibilities to the profession, both during, and at the conclusion of, training. The quality and method of work, character and conduct of the therapist should be on a par with that demonstrated by the other members of the dental team.

PROGRAM: Child Care Worker
LOCATION: Kensington Campus
LENGTH: 2 Years
CERTIFICATION: Diploma
PREREQUISITE: The Ontario Secondary School Graduation Diploma or its equivalent is a minimal prerequisite; preferably experienced with groups of children; mature personality with broad life experience; personal interview necessary; minimum age of 18 years.

GBC CODE: AP101
FEE: $260 per year

Child care workers are men and women trained to work therapeutically with emotionally disturbed children and adolescents in residential treatment settings and community programs. Practical experience is gained through field work, when students are under the direction of skilled supervisors, who advise and guide them.

Child care workers find employment in provincial institutions, treatment centres, private social agencies, group homes and hospitals.

FIRST YEAR	Semesters I & II	Hours per week
CHI 160	Field Practice	24
CHI 161	Human Growth and Development	1½
CHI 162	Health and First Aid	Taught as a block
CHI 164	Caring for the Disturbed Child	1½
CHI 165	Creative Activities with Children	2
CHI 166	Social Services (½ year)	2
CHI 167	Student Group Seminar	1
CHI 169	Introductory Psychology (½ year)	2
CHI 171	Introductory Sociology (½ year)	2
CHI 170	Report Writing for Social Services (½ year)	1
CHI 172	Group Process I	2
CHI 173	Tutorials	2
		37½

SECOND YEAR	Semesters III & IV	
CHI 260	Field Practice	24
CHI 261	Psychopathology of Childhood	1½
CHI 262	Caring for the Disturbed Adolescent (½ year)	2
CHI 265	Activities with Children (Water Safety)	Taught as a block
CHI 267	Student Group Seminar	1
CHI 268	Treatment Philosophies	2
CHI 269	Professional Development (½ year)	1½
CHI 271	Therapeutic Programming (½ year)	1½
CHI 270	Group Process II	2
CHI 272	Working with Families (½ year)	2
CHI 274	Independent Study	1
		35

PROGRAM: Day Care Worker
LOCATION: Kensington Campus
LENGTH: 2 Years
CERTIFICATION: Diploma
GBC CODE: AP105
FEE: $260 per year
PREREQUISITE: The Ontario Secondary School Graduation Diploma or its equivalent is a minimal prerequisite; preferably experienced with infants and very young children; mature personality with broad life experience; personal interview necessary.

The increasing provision of day care facilities for infants by Metro Toronto social services and by independent provincially accredited organizations indicates that employment prospects are excellent. It should be noted that this program has been designed for individuals who have a very special interest in the provision of quality-and family-oriented day care services.

This program qualifies graduates to assist in setting up, supervising or working in day care centres. Graduates are eligible to apply for certificati by the Association for Early Childhood Education, Ontario

Each semester is divided into two blocks of eight weeks. One eight week block is for academic studies, the other for field placements.

FIRST YEAR	Semesters I & II	Hours per week
DCW100	Infant and Child Development	4
DCW101	The Infant's Physical Health, Well Being & First Aid	2
DCW102	Introductory Psychology	2
DCW103	Mental Health	2
DCW104	Principles of Day care	4
DCW105	Creative Expression in Childhood	5
DCW109	Nutrition & Food Management	4
DCW110	Special Studies - Communications	3
DCW208	Group Process	4
		30
DCW111	Tutorials	3
DCW112	Field Practice	27
		30

SECOND YEAR	Semesters III & IV	
DCW200	Human Growth & Development	4
DCW201	Children With Special Needs	3
DCW202	Cognitive Development	4
DCW204	Varieties of Day Care	1
DCW205	Planning, Management & Legislation	5
DCW206	Family Dynamics	4
DCW207	Parent Interviewing & Counselling	4
DCW106	Introductory Sociology *	2
DCW107	Community Services	1
DCW108	Professional Development	2
		30
DCW210	Tutorials	3
DCW211	Field Practice	27
		30

* Not taught in 1974 - 75

PROGRAM: Dental Assistant
LOCATION: Casa Loma Campus
LENGTH: 1 Year
CERTIFICATION: Certificate
GBC CODE: AP141
FEE: $260 per year
PREREQUISITE: The Ontario Secondary School Graduation Diploma of the four or five year program with English, mathematics, and at least one science or equivalent certification; typewriting proficiency of 30 wpm, or requirement to enrol in typing course; personal interview necessary.

The graduate of this program will have received a background in the dental sciences, operating room assistance, dental materials, limited dental laboratory methods, dental x-ray techniques, as well as business procedures that will allow her to function as an effective member of the dental team.

Since the dental assistant is in constant contact with the public, she should have poise and an outgoing personality.

Semester 1		Hours per week
DENT 109	Dental Radiography	1
DENT 104	Basic Health Science	3
DENT 102	Dental Anatomy	1
DENT 105	Dental Laboratory	2
DENT 106	Dental Materials	2
DENT 107	Dental Assisting	8
DENT 108	Professional Development	1
OP 114	Office Practice	3
ENG 110	Business English & Correspondence	2
OP 114	Bookkeeping	2
DENT 105	Tooth Anatomy	1
DENT 111	Clinical Practice	2
SOC 100	Sociology	2
		30

Semester 2		
DENT 107	Dental Assisting	6
DENT 109	Dental Radiography	2
DENT 105	Dental Laboratory	3
OP 114	Office Practice	5
DENT 111	Clinical Practice	5
DENT 106	Dental Materials	2
DENT 110	Professional Development	1
OP 110	Language & Communication	2
DENT 104	Basic Health Science	2
SOC 100	Sociology	2
		30

PROGRAM: Dental Technician
LOCATION: Casa Loma Campus
LENGTH: 3 Years
CERTIFICATION: Diploma
PREREQUISITE: A minimum of the Ontario Secondary School Graduation Diploma with chemistry and physics; in addition, candidates should either have or develop a high degree of manual dexterity.

GBC CODE: AP102
FEE: $260 per year

The dental technician may be employed by one dentist or he may operate a laboratory alone; he may be the owner of a laboratory employing several technicians or he may be an employee in a laboratory owned by an individual or a firm.

With the guidance and advice of a committee representing both the Royal College of Dental Surgeons of Ontario and the Governing Board of Dental Technicians, a 3 - year program of studies is provided. This will include the theory and practice of all aspects of dental laboratory work and a related subject program designed to give insight into the problems of small business management. Arrangements are also made for the student to participate in field work at the Faculty of Dentistry, and in commercial laboratories.

FIRST YEAR	Semesters I & II	Hours per week
DENT100	Dental Lab. and Lec. 1	19
DENT101	Dental Materials	1
DENT102	Dental Anatomy	1
ENG100	Language & Communication	2
DENT103	Science of Dental Materials	2
CHEM107	Chemistry	2
EC100	Economics	1
MATH107	Technical Mathematics	2
		30

SECOND YEAR	Semesters III & IV	
DENT200	Dental Lab. and Lec II	23
ES211	Elective Studies	1
MET200	Metallurgy	2
MATH207	Business Mathematics	1
CHEM207	Chemistry	2
EC200	Economics (Semester II)	1
		30

THIRD YEAR	Semesters V & VI	
DENT300	Dental Lab. and Lec. III	25
		25

PROGRAM: Hospital Orderly (Training)
LOCATION: Kensington Campus
LENGTH: 20 Weeks
CERTIFICATION: Certificate
PREREQUISITE: Candidate must have Grade 10 or equivalent standing. All students must have a working knowledge of English.

GBC CODE: AP550
FEE: $5 per week

The hospital orderly works under the direction of the professional nurse, caring for male patients, with special emphasis on individual care. Professional preparation includes self-knowledge and attention to personal health and well-being; this focus moves from self to others and from health to illness. The emotional and physical demands of his work require a hospital orderly to have a tactful and pleasant manner and ability to work with others and to be adaptable.

HO530	Hospital Organization and Routines
HO531	Patient Care & Mental Health
HO532	Nursing Procedures and Skills & First Aid
HO533	Anatomy and Physiology (systems and approach)
HO534	Nutrition and Dietetics
HO535	Practical Work in Hospital
PHY550	Science

PROGRAM: Nursery Aide
LOCATION: Kensington Campus
LENGTH: 16 Weeks
CERTIFICATION: Certificate
PREREQUISITE: Grade 10 or equivalent

GBC CODE: AP551
FEE: $5 per week

The nursery aide is engaged in the actual care and guidance of pre-school-age children, under the direction of a qualified nursery supervisor in a nursery school or day nursery. Knowledge of the basic aims and procedures of routine and play activities in different types of nurseries is essential, as well as a knowledge of young children. Physical stamina and good health are required, as it is often necessary to lift a child or move materials and equipment. Because the adults in a nursery must work well together, it is essential that positive mental health habits are practised.

In order to gain practical experience and to have the opportunity to observe young children, students are placed in day nurseries in the community.

NA530	History of Preschool Education & Types of Nursery Settings
NA532	Guidance Methods
NA533	Programs - Routine and Play
NA535	Child Development
NA536	Mental Health - Psychology
NA537	First Aid
NA538	Field Practice
NA539	Creative Activities with Children
NA540	Nutrition

PROGRAM: Air Conditioning Technician GBC CODE: AR101
LOCATION: Casa Loma Campus FEE: $260 per year
LENGTH: 2 years
CERTIFICATION: Diploma
PREREQUISITE: Ontario Secondary School Graduation Diploma or equivalent

The air conditioning technician has a specialized working knowledge of the design, installation and operation of air conditioning systems in residential, commercial and industrial buildings.

There are many challenging opportunities in the air conditioning industry for trained technicians interested in occupations such as sales promotion, system design, job estimating, contract supervision and system balancing.

FIRST YEAR	Semester I	Hours per week	Credit Units
AIR100	Refrigeration	10	7
AIR105	Air Conditioning	7	5
AIR108	Instrumentation	2	2
AIR109	Electrical Fundamentals	3	3
ARDR124	Drafting	2	1.5
MATH100	Mathematics	3	3
PHYS100	Applied Physics I	2	2
MATH120	Applied Computer Programming	2	2
		31	25.5
	Semester II		
HT104	Heating	8	5.5
AIR105	Air Conditioning	7	5
AIR107	Hydronic Heating	2	2
AIR109	Electrical Fundamentals	3	3
ARDR124	Drafting	2	1.5
MATH100	Mathematics	3	3
PHYS100	Applied Physics I	2	2
ENG100	Language & Communication	3	3
		30	25
SECOND YEAR	Semester III		
HT114	Heating	5	3.5
AIR203	Air Conditioning Systems	9	6
AIR201	Automatic controls	3	3
WELD149	Welding oxy-acetylene brazing and cutting	2	1.5
ARDR232	Drafting	4	3
PHYS202	Physics/Thermodynamics	2	2
ENG200	Language & Communication	2	2
MATH200	Mathematics	3	3
		30	24
	Semester IV		
MATH200	Mathematics	3	3
ENG200	Language & Communication	2	2
PHYS202	Physics/Thermodynamics	2	2
AIR200	Refrigeration	7	5
AIR201	Automatic controls	3	3
AIR203	Air Conditioning Systems	9	6
AIR205	Estimating	4	4
		30	25

PROGRAM: Appliance Servicing GBC CODE: AR545
LOCATION: Casa Loma Campus
LENGTH: 1 year (40 weeks) FEE: $5 per week
CERTIFICATION: Certificate
PREREQUISITE: Ontario Grade 10 or equivalent

This program is designed to give a thorough knowledge of the theory and practice required for the maintenance and repair of home appliances. The student should have a high mechanical aptitude. Students are prepared for such occupations as servicemen, factory representatives, field representatives, appliance salesmen, appliance inspectors and production supervisors. Courses in laundry equipment, refrigeration, and electrical appliances are presented in blocks of thirteen weeks.

Semesters I & II

AP530	Laundry Equipment
AP532	Refrigeration
AP533	Electrical Appliances
MATH534	Mathematics
ENG530	Language and Communication
SBM532	Small Business Management

PROGRAM: Blueprint Reading GBC CODE: AR583
LOCATION: Casa Loma Campus
LENGTH: 8 weeks FEE: $5 per week
CERTIFICATION: Certificate
PREREQUISITE: Ontario Grade 10 or equivalent

Advancement in many companies depends on ability to read blueprints; this program should enable a person to improve his position in the area of his specialization.

ARDR538	Blueprint Reading
ENG516	English
MATH516	Mathematics

PROGRAM: General Carpentry GBC CODE: AR549
LOCATION: Casa Loma Campus
LENGTH: 40 weeks FEE: $5 per week
CERTIFICATION: Certificate
PREREQUISITE: Ontario Grade 8 or equivalent

This course is offered to students who are desirous of learning the skills which would fit them for the Carpentry industry. The course covers hand and power tools, general wood-working, acoustics, metal work, welding. If the student wishes to continue into the Apprenticeship Program, credits within the apprenticeship regulations are given for the in-school training.

CAR530	Carpentry
ENG530	English
MATH530	Mathematics
ARDR541	Drafting

PROGRAM:	Civil Engineering Technician	GBC CODE:	AR110
LOCATION:	Casa Loma Campus	FEE:	$260 per year
LENGTH:	2 years		
PREREQUISITE:	Ontario Secondary School Graduation Diploma or equivalent		

This program provides basic theoretical and practical training for those who seek a career in the design, planning or construction of civil engineering projects such as highways, structures, site surveying, pollution control, and utilities.

On graduation, the student who elects to take this program could expect to find employment with consulting engineers, highway departments, construction firms, or planning departments.

He can be employed as design draftsman, engineering assistant, site surveyor, construction supervisor, or quality inspector.

FIRST YEAR	Semester I	Hours per week	Credit Units
SURV101	Plane Surveying	8	5.5
CIV101	Engineering Drawing & Design	6	6
CIV103	Construction Materials	3	3
CIV104	Specifications and Estimating	2	2
MATH100	Mathematics	5	5
ENG100	Language & Communication	2	2
MECH100	Mechanics	5	5
		31	28.5
	Semester II		
SURV101	Plane Surveying	8	5.5
CIV101	Engineering Drawing & Design	6	6
CIV103	Construction Materials	3	3
CIV104	Specifications & Estimating	2	2
MATH100	Mathematics	5	5
ENG100	Language & Communication	2	2
PHYS100	Applied Physics I	5	5
		31	28.5
SECOND YEAR	Semester III		
CIV200	Structural Drawing & Design	4	4
CIV202	Municipal Services	3	3
CIV203	Highway Technology	5	5
CIV204	Specifications & Estimating	2	2
SURV201	Advanced Plane Surveying	6	4
MATH120	Applied Computer Programming	2	2
MATH200	Mathematics	4	4
ENG200	Language & Communication	2	2
MECH110	Mechanics of Materials	2	2
		30	28
	Semester IV		
CIV200	Structural Drawing & Design	4	4
CIV202	Municipal Services	3	3
CIV203	Highway Technology	5	5
CIV204	Specifications & Estimating	2	2
SURV201	Advanced Plane Surveying	6	4
MATH120	Applied Computer Programming	2	2
MATH200	Mathematics	4	4
ENG200	Language & Communication	2	2
MECH110	Mechanics of Materials	2	2
		30	28

PROGRAM:	Concrete Technician	GBC CODE:	AR109
LOCATION:	Casa Loma Campus		
LENGTH:	2 years	FEE:	$260 per year
CERTIFICATION:	Diploma		
PREREQUISITE:	Ontario Secondary School Graduation Diploma or equivalent		

This program is designed to equip the graduate with the knowledge and techniques required for employment within the ever-expanding concrete industry.

The graduate will be able to operate at a significant and unique level in the labour force, between the engineer and the skilled craftsman; he will be familiar with the responsibilities and talents of both.

The curriculum has been designed to encompass a wide range of courses and will open up job opportunities in concrete construction, inspection, manufacturing, supply and sales.

FIRST YEAR	Semester I	Hours per week	Credit Units
CO101	Quantity Surveying I	4	4
CO105	Principles of Concrete	4	2.5
CO106	Concrete Construction Methods I	6	4
CO107	Blueprint Reading & Drafting	4	2.5
MATH100	Mathematics	5	5
ENG100	Language & Communication	2	2
MECH100	Mechanics	5	5
		30	25
	Semester II		
CO101	Quantity Surveying I	4	4
CO105	Principles of Concrete	4	2.5
CO106	Concrete Construction Methods I	6	4
CO107	Bluepring Reading & Drafting	4	2.5
MATH100	Mathematics	5	5
ENG100	Language & Communication	2	2
MECH110	Mechanics of Materials	5	5
		30	25
SECOND YEAR	Semester III		
CO203	Contracts & Specifications	3	3
CO205	Principles of Concrete	4	4
CO206	Concrete Construction Methods II	4	2.5
CO207	Concrete Structural Design	4	4
CHEM215	Chemistry	4	4
PSY204	Industrial Psychology and Salesmanship	4	4
MATH200	Mathematics	4	4
ENG200	Language & Communication	2	2
MATH120	Applied Computer Programming	2	2
		31	29.5

PROGRAM: Concrete Technician (Continued)

SECOND YEAR	Semester IV	Hours per week	Credit Units
CO203	Contracts and Specifications	3	3
CO205	Principles of Concrete	4	4
CO206	Concrete Construction Methods II	4	2.5
CO207	Concrete Structural Design	4	4
EC214	Business Management and Labour Relations	4	4
CHEM215	Chemistry	4	4
MATH200	Mathematics	4	4
ENG200	Language & Communication	2	2
MATH120	Applied Computer Programming	2	2
		31	29.5

PROGRAM: Construction Technician GBC CODE: AR103
LOCATION: Casa Loma Campus
LENGTH: 2 years FEE: $260 per year
CERTIFICATION: Diploma
PREREQUISITE: Ontario Secondary School Graduation Diploma or equivalent

With the guidance and advice of a committee representing the construction and allied industries, this program is designed to prepare young men to enter the construction industry in various capacities leading to positions as estimators, expediters, building inspectors, building products salesmen, field engineers and superintendents. These positions are not seasonal in nature.

FIRST YEAR	Semester I	Hours per week	Credit Units
CO100	Building Construction	4	2.5
CO101	Quantity Surveying I	6	6
CO102	Mechanical Installations I	3	3
CO103	Construction Materials	3	3
CO104	Site Engineering	2	1.5
MATH100	Mathematics	5	5
ENG100	Language & Communication	2	2
MECH100	Mechanics	5	5
		30	28
	Semester II		
CO100	Building Construction	4	2.5
CO101	Quantity Surveying I	6	6
CO102	Mechanical Installations I	3	3
CO103	Construction Materials	3	3
MATH100	Mathematics	5	5
ENG100	Language & Communication	2	2
PHYS100	Applied Physics I	5	5
CO104	Site Engineering	2	1.5
		30	28
SECOND YEAR	Semester III		
CO204	Site Engineering	6	4
CO200	Building Construction	2	1.5
CO201	Quantity Surveying II	3	3
CO202	Mechanical Installations II	4	4
CO203	Contracts and Specifications	4	4
MATH200	Mathematics	4	4
ENG200	Language & Communication	2	2
EC100	Economics	2	2
MECH110	Mechanics of Materials	2	2
MATH120	Applied Computer Programming	2	2
		31	28.5
	Semester IV		
CO204	Site Engineering	2	1.5
CO200	Building Construction	4	2.5
CO201	Quantity Surveying II	5	5
CO202	Mechanical Installations II	4	4
CO203	Contracts and Specifications	4	4
MATH200	Mathematics	4	4
ENG200	Language & Communication	2	2
EC100	Economics	2	2
MECH110	Mechanics of Materials	2	2
MATH120	Applied Computer Programming	2	2
		31	29

PROGRAM: Drafting GBC CODE: AR540
LOCATION: Casa Loma Campus
LENGTH: 1 year (40 weeks) FEE: $5 per week
CERTIFICATION: Certificate
PREREQUISITE: Ontario Grade 10 or equivalent

Graduates of this program find employment in architectural and engineering offices, municipal and provincial offices and electrical or electronic offices. Students graduating from this program with honours standing will be considered for admission in the technician program.

Semesters I & II	
ARDR551	Architectural Drawing
ARDR550	Materials and Methods
ARDR552	Mechanical Drawing
ARDR558	Electrical Drawing
ARDR559	Mechanical Services Drawing
MATH530	Mathematics
ENG530	Language & Communication

NOTE: A similar program is offered in Engineering Technology, EN560

PROGRAM: Drafting Refresher GBC CODE: AR547
LOCATION: Casa Loma Campus
LENGTH: 20 weeks FEE: $5 per week
CERTIFICATION: Certificate
PREREQUISITE: Ontario Grade 10 or equivalent

This program has been designed to familiarize students, who have already obtained their qualifications in countries outside Canada, with Canadian engineering practice, in mechanical, architectural, structural, electrical or electronic fields.

Satisfactory completion of the program will ensure ability to compete in the industrial market for positions of at least junior draftsman level.

ARDR539	Drafting
MATH533	Mathematics
ENG541	Language & Communication
Electives:	architectural, mechanical, structural, electrical or electronics drafting.

PROGRAM: Dry Wall Taper GBC CODE: AR582
LOCATION: Casa Loma Campus
LENGTH: 8 weeks FEE: $5 per week
CERTIFICATION: Certificate
PREREQUISITE: Ontario Grade 8 or equivalent

The emphasis in this program is directed toward the basic hand skill, mechanical procedures, and trade techniques necessary for the development of competent mechanics within the taping field. The program is structured to prepare graduates to become employable with the drywall industry and to meet the ever-growing demands of this industry for skilled drywall tapers.

TA530	Taping/Drywall
MATH516	Mathematics
ENG516	English
ARDR510	Drafting and Blueprint Reading

PROGRAM: Drafting Technician - Architectural GBC CODE: AR104
LOCATION: Casa Loma Campus
LENGTH: 2 years FEE: $260 per year
CERTIFICATION: Diploma
PREREQUISITE: Ontario Secondary School Graduation Diploma or equivalent

This program is designed to provide technicians for architects' offices, construction companies, engineering firms, and government departments. The program of instruction is arranged to develop skills in architectural drawing, detailing, rendering, and model building; and to impart knowledge of architectural design, contracts, organization, and business relationships.

Graduates find employment as draftsmen, field representatives, building product salesmen, and expediters.

FIRST YEAR	Semester I	Hours per week	Credit Units
ARCH100	Materials & Methods	2	2
ARDR102	Architectural Drafting I	11	7
ARDR120	Descriptive Geometry I	2	1.5
SURV110	Surveying	3	2
MATH100	Mathematics	5	5
ENG100	Language & Communication	2	2
MECH100	Mechanics	5	5
		30	24.5
	Semester II		
ARCH100	Materials & Methods	2	2
ARDR102	Architectural Drafting I	10	6.5
ARDR120	Descriptive Geometry I	2	1.5
MATH100	Mathematics	5	5
ENG100	Language & Communication	2	2
EC100	Economics	4	4
PHYS100	Applied Physics I	5	5
		30	26.0
SECOND YEAR	Semester III		
ARCH200	Materials & Methods	2	2
ARDR111	Mechanical Installations Drafting	3	2
ARDR202	Architectural Drafting II	10	6.5
ARDR220	Descriptive Geometry II	4	2.5
MATH200	Mathematics	4	4
ENG200	Language & Communication	2	2
MECH110	Mechanics of Materials	4	4
MATH120	Applied Computer Programming	2	2
		31	25
	Semester IV		
ARCH200	Materials and Methods	3	3
ARDR202	Architectural Drafting II	10	6.5
ARDR111	Mechanical Installations Drafting	3	2
CO101	Quantity Surveying	4	4
ARDR115	Structural Drafting	4	2.5
MATH200	Mathematics	4	4
ENG200	Language & Communication	2	2
		24	30

PROGRAM: Drafting Technician - General GBC CODE: AR105
LOCATION: Casa Loma Campus
LENGTH: 2 years FEE: $260 per year
CERTIFICATION: Diploma
PREREQUISITE: Ontario Secondary School Graduation Diploma or equivalent

Versatility is the keynote of this program which trains for industry a draftsman who has a general knowledge of the architectural, survey and mechanical installations; with such a versatile background, he should be an asset to any drafting office.

FIRST YEAR	Semester I	Hours per week	Credit Units
ARDR112	Drafting	6	4
SURV100	Survey Computations & Drafting	4	2.5
ARDR154	Art and Presentation	4	2.5
ARCH100	Materials and Methods	4	4
MATH100	Mathematics	5	5
ENG100	Language & Communication	2	2
MECH100	Mechanics	5	5
		30	25
	Semester II		
ARDR102	Architectural Drafting I	8	5.5
ARDR120	Descriptive Geometry I	4	2.5
MATH100	Mathematics	5	5
ENG100	Language & Communication	2	2
ARDR107	Mechanical Installations Drafting I	6	4
MECH110	Mechanics of Materials	5	5
		30	24
SECOND YEAR	Semester III		
ARDR202	Architectural Drafting II	8	5.5
MATH200	Mathematics	4	4
ENG200	Language & Communication	2	2
SURV100	Survey Computations & Drafting	4	2.5
ARDR108	Structural Drafting	5	3
ARCH200	Materials and Methods	4	4
STR123	Structural Design	3	3
		30	24
	Semester IV		
ARDR202	Architectural Drafting II	6	4
ARDR107	Mechanical Installations Drafting I	6	4
ARDR108	Structural Drafting I	4	2.5
STR123	Structural Design	3	3
PHYS100	Applied Physics I	5	5
ENG200	Language & Communication	2	2
MATH200	Mathematics	4	4
		30	24.5

PROGRAM: Drafting Technician - Mechanical Services GBC CODE: AR107
LOCATION: Casa Loma Campus
LENGTH: 2 years FEE: $260 per year
CERTIFICATION: Diploma
PREREQUISITE: Ontario Secondary School Graduation Diploma or equivalent

This program is intended to prepare a technician for a position in an architect's or consultant's office as a draftsman or estimator in the mechanical installation department. The student will gain some knowledge of the design and a thorough knowledge of the graphical layout of all the mechanical services required in an architectural structure, plus a general knowledge of the architectural and structural components and methods of construction. A very broad and intensive study is made in the areas of air conditioning, refrigeration, warm air, water and steam heating systems, plumbing and drainage systems.

FIRST YEAR	Semester I	Hours per week	Credit Units
ARDR106	Architectural Drafting I	4	2.5
ARDR107	Mechanical Installation Drafting I	8	5.5
ARDR109	Electrical Installation Drafting I	4	2.5
ARDR120	Descriptive Geometry I	2	1.5
MATH100	Mathematics	5	5
ENG100	Language & Communication	2	2
MECH100	Mechanics	5	5
		30	24
	Semester II		
ARDR106	Architectural Drafting I	4	2.5
ARDR107	Mechanical Installations Drafting I	8	5.5
ARDR109	Electrical Installations Drafting I	4	2.5
ARDR120	Descriptive Geometry I	2	1.5
MATH100	Mathematics	5	5
ENG100	Language & Communication	2	2
PHYS100	Applied Physics I	5	5
		30	24
SECOND YEAR	Semester III		
ARDR228	Air Conditioning & Refrigeration	9	6
ARDR229	Heating Systems	4	2.5
ARDR230	Plumbing Systems	6	4
MATH200	Mathematics	4	4
ENG200	Language & Communication	2	2
MECH115	Mechanics of Fluids	5	5
		30	23.5
	Semester IV		
ARDR228	Air Conditioning & Refrigeration	9	6
ARDR229	Heating Systems	4	2.5
ARDR230	Plumbing Systems	6	4
MATH200	Mathematics	4	4
ENG200	Language & Communication	2	2
MECH110	Mechanics of Materials	5	5
		30	23.5

PROGRAM: Drafting Technician - Structural GBC CODE: AR108
LOCATION: Casa Loma Campus
LENGTH: 2 years FEE: $260 per year
CERTIFICATION: Diploma
PREREQUISITE: Ontario Secondary School Graduation Diploma or equivalent

For the young man gifted with a talent for technical work, the opportunity to play a part in the construction industry offers a most interesting vocation. To be one of the team which is building the modern scene is itself a satisfying experience. It is for the purpose of assisting the young man with ambition that this program is offered. Graduates of the program will find a waiting field in engineering offices, fabricating companies, municipal and governmental offices.

FIRST YEAR	Semester I	Hours per week	Credit Units
C0200	Building Construction	4	2.5
ARDR120	Descriptive Geometry I	3	2
STR122	Structural Detailing	11	7
MATH100	Mathematics	5	5
ENG100	Language & Communication	2	2
MECH100	Mechanics	5	5
		30	23.5
	Semester II		
ARDR120	Descriptive Geometry I	3	2
STR122	Structural Detailing	11	7
MATH100	Mathematics	5	5
ENG100	Language & Communication	2	2
MECH110	Mechanics of Materials	5	5
SURV110	Surveying	4	2.5
		30	23.5
SECOND YEAR	**Semester III**		
C0103	Construction Materials	3	3
C0208	Mechanical & Electrical Installations	3	2
STR212	Structural Steel - Problems & Drawing	8	5.5
STR213	Reinforced Concrete - Problems & Drawing	7	4.5
MATH200	Mathematics	4	4
ENG200	Language & Communication	2	2
MECH210	Mechanics of Materials	3	3
		30	24
	Semester IV		
C0103	Construction Materials	3	3
C0208	Mechanical & Electrical Installations	3	2
STR214	Project Drawing	15	10
MATH200	Mathematics	4	4
ENG200	Language & Communication	2	2
MECH210	Mechanics of Materials	3	3
		30	24

PROGRAM: Heating Technician GBC CODE: AR542
LOCATION: Casa Loma Campus
LENGTH: 1 year (52 weeks) FEE: $5 per week
CERTIFICATION: Certificate
PREREQUISITE: Ontario Grade 10 or equivalent

In the heating field, there is a considerable demand for technical personnel who are knowledgeable in oil, gas and electric heating and cooling systems; this demand has been created, in part, by the expansion of building construction.

Semester I		Semester II	
HT500	Domestic oil burners	HT510	Heating
HT501	Oil Burners	HT511	Heating
HT510	Heating	HT540	Gas Burners
PHYS531	Electrical Module	MATH530	Mathematics
MATH533	Mathematics	PHYS531	Physics
ENG541	Language & Communication	ARDR531	Blueprint Reading
ARDR531	Blueprint Reading	ENG530	Language & Communication

Semester III

HT512	Heating
HT513	Heating
MATH530	Mathematics
PHYS531	Physics
ENG530	Language & Communication

PROGRAM: Oil Burner Servicing GBC CODE: AR541
LOCATION: Casa Loma Campus
LENGTH: 20 weeks FEE $5 per week
CERTIFICATION: Certificate
PREREQUISITE: Grade 10

During the past years, hundreds of thousands of automatic heating systems have been installed in Canada; this expansion has brought with it demands for qualified personnel to install and maintain this equipment.

HT530	Domestic Oil Burners
HT531	Oil Burners
HT532	Heating
HT540	Gas Burners
ARDR531	Drafting and Blueprint Reading
MATH533	Mathematics
ENG541	Language & Communication

PROGRAM: Painting and Decorating GBC CODE: AR546
LOCATION: Casa Loma Campus
LENGTH: 8 weeks FEE: $5 per week
CERTIFICATION: Certificate
PREREQUISITE: Grade 8 or equivalent

This eight-week program has a major portion of its content directed towards paper-hanging. It will cover all the grades, qualities and styles of wallpaper.

PDEC530	Painting
MATH516	Mathematics
ENG516	English

PROGRAM: Residential Metal Siding Installation GBC CODE: AR590
LOCATION: Casa Loma Campus
LENGTH: 8 weeks FEE: $5 per week
CERTIFICATION: Certificate
PREREQUISITE: Successful completion of pre-requisite screening program

Installing metal siding, soffit, fascia and rainwater goods are the opportunities that await the successful graduates of this program.

The structure of the program is such that the student will receive training in a broad range of minor skills involving metal handling and construction practices common to the current residential construction industry. The assembly of these skills in the latter stages of the courses will create a much sought after specialist, who with personal motivation, can secure a financially rewarding future.

SID530	Siding Installation
MATH516	Mathematics
ENG516	English

PROGRAM: Refrigeration and Air Conditioning GBC CODE AR544
LOCATION: Casa Loma Campus
LENGTH: 2 Semesters (34 weeks) FEE: $5 per week
CERTIFICATION: Certificate
PREREQUISITE: Grade 10

This program is designed to prepare young men to enter an apprenticeship program leading to certification (compulsory in Ontario) as a journeyman refrigeration mechanic. This is an excellent opportunity for any young man who left school before completing grade 12 to enter a challenging trade that pays well and assures full-time employment. Under an agreement with Industrial Training branch of the Ministry of Colleges and Universities, graduates of this program are granted equivalent time off the apprenticeship period and are excused the in-school requirements of the basic period of the apprenticeship program.

	Semesters I & II
ARDR536	Drafting
REF533	Electrical
REF530	Refrigeration Theory
REF531	Refrigeration Practice
WELD540	Oxy-acetylene Welding, Brazing and Cutting
MATH532	Mathematics
ENG530	Language and Communication

PROGRAM: Stationary Engineering GBC CODE: AR548
LOCATION: Casa Loma Campus
LENGTH: 40 weeks FEE: $5 per week
CERTIFICATION: Certificate
PREREQUISITE: Grade 8-9

This program will provide instruction in all modules required for accreditation toward the 4th class and 3rd class stationary engineering certificate levels. Because of the modularization of this training, further details are available upon request.

STATIONARY ENGINEERING - 4TH CLASS

1st Semester — 20 weeks

Course	Modular Area	Periods per modular area
1	STAT530 Steam Boilers	60
2	STAT535 Physics, Chemistry, Language & Communication	60
3	STAT539 Heating, Refrigeration, Thermodynamics, Air & Gas	60
4	STAT540 Fuel Systems, Int. Comb. Engines, Lubrication	50
5	STAT547 Aux. Equip. Feedwater Treatment, Steam Engines	60
6	STAT551 Math, Inst. & Controls	40
7	STAT555 Sketching, Rigging, Plant Services, Hand Tools	50
8	STAT559 Electrical	20
9	STAT563 Practical Shopwork	200
		600

STATIONARY ENGINEERING - 3RD CLASS

2nd Semester — 20 weeks

1	STAT531 Steam Boilers, Plant Services	60
2	STAT536 Physics, Chemistry, Language & Communication	60
3	STAT540 Heating, Refrigeration, Thermodynamics, Air & Gas	100
4	STAT544 Fuel Systems, Int. Comb.Engines, Lubrication	65
5	STAT548 Aux. Equip. Feedwater Treatment, Turbines	80
6	STAT552 Math, Inst. & Controls	60
7	STAT556 B. P. R. Strength of Materials	50
8	STAT560 Electrical, Electronics	60
9	STAT564 Practical Shopwork	65
		600

THE GEORGE BROWN COLLEGE OF APPLIED ARTS & TECHNOLOGY

PROGRAM:	Survey Technician	GBC CODE:	AR102
LOCATION:	Casa Loma Campus		
LENGTH:	2 years	FEE:	$260 per year
CERTIFICATION:	Diploma		
PREREQUISITE:	Ontario Secondary School Graduation Diploma or equivalent		

The survey technician program provides the basic theoretical and practical knowledge required for those who wish to enter surveying at the technical level.

Upon graduation a student will have a variety of positions from which to choose. He may be a draftsman, or a surveyor in legal, control and engineering surveys. He may be working in southern Ontario or helping to develop the mid-Canada corridor. However, no matter what he chooses, he will be part of a team in one of Canada's most challenging and exciting fields.

FIRST YEAR	Semester I	Periods per week	Credit Units
ARDR121	Descriptive Geometry	2	1.5
SURV100	Survey Computations & Drafting	8	5.5
SURV101	Plane Surveying	8	5.5
MATH100	Mathematics	5	5
ENG100	Language & Communication	2	2
MECH100	Mechanics	5	5
		30	24.5
	Semester II		
ARDR121	Descriptive Geometry	2	1.5
SURV100	Survey Computations & Drafting	8	5.5
SURV101	Plane Surveying	8	5.5
MATH100	Mathematics	5	5
ENG100	Language & Communication	2	2
PHYS100	Applied Physics I	5	5
		30	24.5
SECOND YEAR	Semester III		
CIV202	Municipal Services	4	4
SURV200	Survey Computations & Drafting	6	4
SURV201	Advanced Plane Surveying	6	4
SURV202	Photogrammetry	2	2
SURV203	Practical Astronomy	2	2
SURV204	Legal Surveying	2	2
MATH200	Mathematics	4	4
ENG200	Language & Communication	2	2
MATH120	Applied Computer Programming	2	2
		30	26
	Semester IV		
CIV202	Municipal Services	4	4
SURV200	Survey Computations & Drafting	6	4
SURV201	Advanced Plane Surveying	6	4
SURV202	Photogrammetry	2	2
SURV203	Practical Astronomy	2	2
SURV204	Legal Surveying	2	2
MATH200	Mathematics	4	4
ENG200	Language & Communication	2	2
MATH120	Applied Computer Programming	2	2
		30	26

THE GEORGE BROWN COLLEGE OF APPLIED ARTS & TECHNOLOGY

PROGRAM:	Survey Technologist	GBC CODE:	AR106
LOCATION:	Casa Loma Campus		
LENGTH:	2 years	FEE:	$260 per year
CERTIFICATION:	Diploma		
PREREQUISITE:	Ontario Secondary School Graduation Diploma, or equivalent, with standing above the average in mathematics and science.		

The survey technologist is equipped to operate at the senior party chief level. He could also fill the position of senior draftsman or office manager in a survey office. He is qualified to accept technical responsibility for a project from its inception to its conclusion and to consult with the professional engineer or Ontario Land Surveyor on the legal and technical aspects of the project.

In practising his career, the survey technologist is involved in operating survey equipment, carrying out control, topographical, or legal surveys; interpreting aerial photographs, preparing field notes, programming computers, searching property ownership, and preparing plans and documents.

FIRST YEAR	Module I	Hours per week	Credit Units
ARDR121	Descriptive Geometry	2	1.5
SURV100	Survey Computations & Drafting	8	5.5
SURV101	Plane Surveying	8	5.5
MATH100	Mathematics (Module I)	5	5
ENG100	Language & Communication	2	2
MECH100	Mechanics	5	5
		30	24.5
	Module II		
ARDR121	Descriptive Geometry	2	1.5
SURV100T	Survey Computations & Drafting	5	3.5
SURV101T	Plane Surveying	8	5.5
MATH100T	Mathematics	5	5
ENG100	Language & Communication	2	2
EC100	Economics	4	4
PHYS100T	Applied Physics	5	5
		31	26.5
	Module III		
ARDR221	Descriptive Geometry	2	1.5
SURV200T	Survey Computations & Drafting	7	4.5
SURV201T	Advanced Plane Surveying	10	6.5
MATH200T	Mathematics	5	5
ENG200	Language & Communication	2	2
EL130	Electrical Fundamentals	4	3
		30	22.5
SECOND YEAR	Module IV		
CIV202	Municipal Services	4	4
SURV200T	Survey Computations & Drafting	4	2.5
SURV201T	Advanced Plane Surveying	6	4
SURV202	Photogrammetry	2	2
SURV203	Practical Astronomy	2	2
SURV204	Legal Surveying	2	2
MATH200T	Mathematics	5	5
ENG200	Language & Communication	2	2
MATH120	Applied Computer Programming	4	4
		31	27.5

PROGRAM: Survey Technologist (Continued)

SECOND YEAR	Module V	Hours per week	Credit Units
CIV202	Municipal Services	4	4
SURV203	Practical Astronomy	2	2
SURV204	Legal Surveying	2	2
SURV300T	Cartography	4	2.5
SURV301T	Advanced Plane Surveying	8	5.5
SURV302T	Photogrammetry	3	3
MATH300T	Mathematics (Statistics)	5	5
ENG332	Business Communication	2	2
		30	26

	Module VI		
CIV302T	Municipal Services	4	4
SURV300T	Cartography	6	4
SURV301T	Advanced Plane Surveying	6	4
SURV302T	Photogrammetry	3	3
SURV303T	Practical Astronomy	2	2
SURV304T	Legal Surveying	2	2
MATH301T	Mathematics (Matrices)	5	5
ENG332	Business Communication	2	2
		30	26

PROGRAM: Accounting
LOCATION: Teraulay Campus
LENGTH: 2 Years
CERTIFICATION: Diploma
PREREQUISITE: Ontario Secondary School Graduation Diploma or its equivalent

GBC CODE: B101
FEE: $260 per year

The courses included in this program provide a valuable preparation for students interested in accounting occupations in business and industry. They also offer preparatory training for students interested in working towards membership in one of the professional accounting societies. Subject credits are granted by the societies in specified courses where content and standards are considered equivalent.

FIRST YEAR — Semester I

See Business Administration

		Semester II	Hours per week
ENG	100	Language & Communication	5
MATH	114	Business Mathematics	5
BUS	101	Human Relations	5
ACC	101	Accounting	10
		Option	5
			30

SECOND YEAR — Semester III

ENG	201	English & The Business World	5
LAW	200	Business Law	5
ACC	200	General Accounting 1	7
ACC	201	Accounting Systems	3
ACC	202	Cost Accounting 1	5
		Option	5
			30

SECOND YEAR — Semester IV

BUS	215	Media Applications	5
ACC	203	General Accounting 11	10
ACC	204	Cost Accounting 11	5
ACC	205	Auditing and Taxation	5
		Option	5
			30

PROGRAM: Business Administration GBC CODE: B109
LOCATION: Teraulay Campus FEE: $260 per year
LENGTH: 2 Years
CERTIFICATION: Diploma
PREREQUISITE: Ontario Secondary School Graduation Diploma or its equival

These programs are designed for the student who seeks a broad, integrated education in the field of business, as well as the opportunity to specialis in selected subject areas. They are of two years duration, with starting dates in September and February.

In the second, third, and fourth semester, considerable scope will be provided in the selection of optional subjects to broaden the student's knowledge in business or other subject areas.

Programs of Study - Common First Semester for Programs B101, B102, B103, B104, and B108.

FIRST YEAR	Semester I	Hours per wee
ENG 100	Language & Communication	5
MATH 114	Business Mathematics	5
BUS 100	Business Organization	4
ACC 100	Introduction to Accounting	4
EDP 100	Introduction to Data Processing	4
MARK 100	Introduction to Marketing	4
PHD 100	Physical Distribution	4
		30

PROGRAM: Business Administration - General GBC CODE: B104
LOCATION: Teraulay Campus FEE: $260 per year
LENGTH: 2 Years
CERTIFICATION: Diploma
PREREQUISITE: Ontario Secondary School Graduation Diploma or equivalent

The objective of this program is to provide students with a highly flexible business program; to enable students to select option combinations that will prepare them for positions in office supervision, personnel, purchasing, and production control; or to make possible any combinations of B101, B102, and B103, which may be of particular interest to them, e.g., marketing and data processing for market research.

FIRST YEAR Semester I

See Business Administration

	Semester II	Hours per week
ENG 100	Language & Communication	5
MATH 114	Business Mathematics	5
BUS 101	Human Relations	5
	3 Options or Majors of B101, B102 or B103 at 101 or 102 level	15
		30

SECOND YEAR	Semester III	
ENG 201	English & The Business World	5
MATH 215	Statistics 1	5
PSY 160	Psychology 1	5
	3 Options or Majors of B101, B102, or B103 at 101, 102, 200, or 201 level	15
		30

	Semester IV	
BUS 215	Media Applications	5
	5 Options or Majors of B101, B102, or B103 at 101, 102, 200, 201, 202, 203, 204, or 205 level	25
		30

PROGRAM: Business Machines
LOCATION: Teraulay Campus
LENGTH: 12 Weeks
CERTIFICATION: Certificate
PREREQUISITE: Typing 35 wpm; ability to read & understand English at the Ontario Grade 10 level.

GBC CODE: B573
FEE: $5 per week

The student is introduced to electronic printing and rotary calculators. When proficiency on these machines is reached, the student is given training on bookkeeping machines.

Graduates acquire a knowledge of calculating machines sufficient to enable them to solve mathematical business problems, and to adapt quickly to any new equipment encountered in a business office. Those whose prerequisite qualifications include courses in bookkeeping acquire a knowledge of performing the complete bookkeeping cycle on the bookkeeping machines and become accredited machine bookkeepers. Those whose prerequisite qualifications do not include courses in bookkeeping acquire a knowledge of posting accounts receivable, accounts payable and payroll on the bookkeeping machine and become accredited posting machine operators.

Instruction on 10-key adders, rotary calculators, printing calculators, electronic calculators, editing, posting and bookkeeping machines.

PROGRAM: Business Machines & Bookkeeping
LOCATION: Teraulay Campus
LENGTH: 40 Weeks
CERTIFICATION: Certificate
PREREQUISITE: Acceptable standing in English language.

GBC CODE: B551
FEE: $5 per week

The program is designed to enable graduates to fill the positions of general office workers in industry with a minimum of on-the-job training. The accent is on manual and machine bookkeeping. Practical work is given on a wide range of the most modern equipment available for office use, such as electronic bookkeeping machines, calculators, and data processing equipment. Office methods and procedures are also taught.

PART I

BOK 548	Bookkeeping
MATH 548	Business Mathematics
ENG 549	Business Communication

PART II

TYP 548	Typewriting
BM 548	Business Machines

PROGRAM: Commercial Accounting
LOCATION: Teraulay Campus
LENGTH: 40 Weeks
CERTIFICATION: Certificate
PREREQUISITE: Acceptable standing in English language and reading

GBC CODE: B554
FEE: $5 per week

This program offers the student a thorough grounding in the principles and practices of modern day accounting. The graduate is equipped to assume employment in accounting-oriented positions.

MATH 548	Business Mathematics
ENG 548	Business Communication
ACC 554	Accounting
BM 552	Business Machines

R.I.A. OPTION

Students enrolled in the commercial accounting program may be recommended for transfer to a special R.I.A. program after an initial 8-week period. Such recommendation by the instructors is based on performance and interest in accounting.

A minimum period of 20 weeks is required to complete the program. Subjects covered include accounting, business mathematics, economics, and report writing.

Graduates of this option may write final first-year R.I.A. examinations in these subjects upon successful completion of the program. There are additional fees for text material and examinations.

PROGRAM: Clerk Typist
LOCATION: Teraulay Campus
LENGTH: 24 weeks
CERTIFICATION: Certificate
PREREQUISITE: Acceptable standing in English language

GBC CODE: B553
FEE: $5 per week

The purpose of this program is to train the student, by an intensive course, to a skill level which will enable her to be employed as a clerk typist.

TYP552	Typewriting & Office Practice
ENG546	Business Communication
MATH556	Business Machines and/or Dictaphone

PROGRAM: Commercial Clerical GBC CODE: B552
LOCATION: Teraulay Campus FEE: $5 per week
LENGTH: 40 weeks
CERTIFICATION: Certificate
PREREQUISITE: Acceptable standing in English language

This program offers the student a variety of general office functions. The graduate is prepared for a position as a clerk typist or a general clerical worker. The inclusion of bookkeeping and business machines develops the necessary skills for a variety of bookkeeping jobs.

MATH552	Business Mathematics
BOK552	Bookkeeping or Clerical Business Practice
TYP552	Typewriting & Office Practice
ENG546	Business Communication
BM552	Business Machines

PROGRAM: Commercial Dicta-Typist GBC CODE: B558
LOCATION: Teraulay Campus FEE: $5 per week
LENGTH: 40 weeks
CERTIFICATION: Certificate
PREREQUISITE: English language standing above the average.

This program offers students an opportunity to acquire skills in dicta-typing, typewriting, office practice, and a knowledge of business English which will equip them to fill dicta-typists positions in business, government, and the medical and legal professions.

TYP549	Typewriting
ENG549	Business Communication
OP514	Office Practice
DIC505	Dictaphone (after 45 wpm acquired in typing)

PROGRAM: Commercial Refresher GBC CODE: B556
LOCATION: Teraulay Campus FEE: $5 per week
LENGTH: 16 weeks
CERTIFICATION: Certificate
PREREQUISITE: Previous commercial training and work experience.

This program is designed for the student with a good background in commercial training and experience, but who has not used this training for some years. Its purpose is to redevelop skills and knowledge for immediate employment.

MATH556	Business Mathematics or BOK152 Bookkeeping
ENG556	Business Communication
TYP556	Typewriting & Office Practice

PROGRAM: Commercial Stenographic GBC CODE: B545
LOCATION: Teraulay Campus FEE: $5 per week
LENGTH: 40 weeks
CERTIFICATION: Certificate
PREREQUISITE: Acceptable standing in English language (Grade 10 Ontario, approximately)

This program offers students an opportunity to acquire skills in shorthand, typewriting and office practice, and a knowledge of business English, which will equip them for stenographic and secretarial positions. The major objectives are 50-55 wpm in typing, and 80-120 wpm in shorthand.

TYP549	Typewriting
ENG549	Business Communication
SH549	Shorthand
OP550	Office Practice

PROGRAM: Court Reporting GBC CODE: B141
LOCATION: Teraulay Campus FEE: $260 per year
LENGTH: 1 Year
CERTIFICATION: Diploma
PREREQUISITE: Ontario Secondary School Graduation Diploma or equivalent and the successful completion of a recognized legal secretarial science program or related business experience; plus a shorthand speed of 130 wpm on straight matter for five minutes and 60 wpm in typing. Applicants must be prepared to take a test to substantiate the necessary skill speeds prior to registration.

An intensive course in reporting skills which will prepare the student for employment in the court reporting field and enable him to write the Chartered Shorthand Reporters' Association examinations.

	Semester 1	Hours per week
ENG301	English and the Legal World	3
BUS307	Legal, Medical & General Terminology	5
BUS308	Court Procedures	5
BUS309	Current Events	2
SH302	Shorthand & Transcription (Pitman or Machine)	15
	Semester II	
ENG304	English and the Legal World	3
BUS312	Legal, Medical & General Terminology	5
BUS311	Field work in the Courts	5
BUS310	Current Events	2
SH303	Shorthand & Transcription (Pitman or Machine)	15

PROGRAM: Electronic Data Processing GBC CODE: B102
LOCATION: Teraulay Campus FEE: $260 per year
LENGTH: 2 Years
CERTIFICATION: Diploma
PREREQUISITE: Ontario Secondary School Graduation Diploma or its equivalent

The graduate of this program will be thoroughly trained in both the theoretical and practical applications of computers. The course will be of particular interest to the student who is initially interested in a career as a computer programmer, and who wishes to advance to the level of a systems analyst.

Applicants may be required to take an aptitude test before being admitted to the program.

FIRST YEAR — Semester I

See Business Administration

		Semester II	Hours per week
ENG	100	Language & Communication	5
MATH	114	Business Mathematics	5
BUS	101	Human Relations	5
EDP	101	Introduction to COBOL	5
EDP	102	Business Applications	5
		Option	5
			30

SECOND YEAR — Semester III

ENG	201	English & The Business World	5
MATH	215	Statistics I	5
EDP	200	Advanced COBOL	5
EDP	201	IBM/370 Assembler I	5
EDP	202	Systems Analysis I	5
		Option	5
			30

Semester IV

BUS	215	Media Applications	5
EDP	204	Advanced Programming	5
EDP	205	IBM/370 Assembler II	5
EDP	206	Systems Analysis II	5
		Options (two)	10
			30

PROGRAM: Electronic Data Processing I (Keypunch & Verifier) GBC CODE: B570
LOCATION: Teraulay Campus FEE: $5 per week
LENGTH: 8 weeks
CERTIFICATION: Certificate
PREREQUISITE: Good working knowledge of the English language, aptitude test, typing speed of 35 wpm on a 10-minute timing.

The purpose of this program is to train keypunch operators to such a level of proficiency that they graduate directly into positions in the field. The objective is a minimum of 10,000 strokes per hour.

EDP570 Keypunch

PROGRAM: Inventory Control - Warehouseman GBC CODE: B555
LOCATION: Teraulay Campus FEE: $5 per week
LENGTH: 24 weeks
CERTIFICATION: Certificate
PREREQUISITE: Ontario Grade 10 or equivalent

This program prepares students for entry into the following fields of employment (as related to stores and warehousing in industry):

Setting up inventory control kardex systems, ordering raw materials and finished assemblies, balancing inventories, shipping and receiving, and warehousing.

INV555 Inventory Control and Warehousing
TYP555 Typewriting
BM552 Business Machines
BOK552 Bookkeeping

PROGRAM: Typing Refresher GBC CODE: B574
LOCATION: Teraulay Campus FEE: $5 per week
LENGTH: 12 weeks
CERTIFICATION: Certificate
PREREQUISITE: Previous experience in typing. Current typing skill of 15-20 wpm minimum.

To enable former trained typists to regain earlier skills to prepare for employment.

TYP558 Typing & Office Practice
ENG556 Business Communication
BM558 Business Machines

PROGRAM: Stenographic Refresher GBC CODE: B575
LOCATION: Teraulay Campus FEE: $5 per week
LENGTH: 12 weeks
CERTIFICATION: Certificate
PREREQUISITE: English language standing above the average; prior shorthand & typing skills in the stenographic field.

To enable former stenographers to regain skills to prepare for employment.

The division of six hours per day between the two courses of typing and shorthand is made according to the individual student's ability and requirements.

PROGRAM: Marketing
LOCATION: Terraulay Campus
LENGTH: 2 Years
CERTIFICATION: Diploma
PREREQUISITE: Ontario Secondary School Graduation Diploma or equivalent
GBC CODE: B103
FEE: $260 per year

The graduate of the two-year program is prepared for employment in any of the marketing functions, such as advertising, sales, planning, market research, wholesaling and retailing.

The program provides through lecture, field work and case study a broad comprehension of the marketing process so that the student may enter the above fields in any organization or may establish his own business.

FIRST YEAR	Semester I		
	See Business Administration		
	Semester II	Hours per week	
ENG 100	Language & Communication	5	
MATH 114	Business Mathematics	5	
BUS 101	Human Relations	5	
MARK 101	The Sales Aspect of Marketing	5	
MARK 102	Advertising & Sales Promotion	5	
	Option	5	
		30	
SECOND YEAR	Semester III		
ENG 201	English & The Business World	5	
MATH 215	Statistics 1	5	
MARK 200	Product Planning & Pricing Policy	5	
MARK 201	Distribution Channels	5	
MARK 202	Marketing Research & Information Systems	5	
PHD 102	Physical Distribution Analysis	5	
		30	
	Semester IV		
BUS 215	Media Applications	5	
MARK 205	Marketing Management I	5	
MARK 206	Marketing Management II	5	
MARK 207	Marketing Management III	5	
	Options (two)	10	
		30	

PROGRAM: Physical Distribution
LOCATION: Teraulay
LENGTH: 2 Years
CERTIFICATION: Diploma
PREREQUISITE: Ontario Secondary School Graduation Diploma or equivalent
GBC CODE: B108
FEE: $260 per year

The graduate in physical distribution has a thorough and specialized working knowledge of the processes of moving goods from the producer to the consumer, as it applies to local, national or international operations.

Numerous challenging opportunities exist in business, industry, and government in the fields of traffic management, inventory control, warehousing, and import/export.

FIRST YEAR	Semester I		Hours per week
	See Business Administration		
	Semester II		
PHD 102	Physical Distribution Systems		5
PHD 103	Warehousing		5
PHD 104	Purchasing		5
BUS 119	Contemporary Business Issues		5
BUS 101	Human Relations		5
ENG 100	Language & Communication		5
SECOND YEAR	Semester III		
PHD 202	Physical Distribution I		5
PHD 201	Inventory Control I		5
PHD 203	Traffic I		5
ENG 201	English in the Business World		5
MATH 215	Statistics I		5
	One Option		5
SECOND YEAR	Semester IV		
PHD 205	Physical Distribution II		10
PHD 206	Inventory Control II		3
PHD 207	Traffic II		3
BUS 215	Media Applications		4
	Two Options		10

PROGRAM: Sales
LOCATION: Teraulay Campus
LENGTH: 1 Year
CERTIFICATION: Certificate
PREREQUISITE: Ontario Secondary School Graduation Diploma or equivalent

GBC CODE: B142
FEE: $260 per year

The graduate will be prepared for employment in all areas of commerce directly related to sales. Special studies include a course in salesmanship, designed to develop the student's sales skills with strong emphasis on field conditions. Complementary academic subjects are included to provide an understanding of other related business areas which will increase his effectiveness in sales and prepare the student for further advancement. The program can be timetabled as a regular day program consisting of two consecutive semesters or arranged so that the student attends one semester at the College, works for a semester and returns to the College for a final semester

		Semester I	Hours per week
ENG	100	Language & Communication	5
BUS	100	Business Organization	5
MATH	114	Business Mathematics	5
BUS	101	Human Relations	5
MARK	100	Introduction to Marketing	5
ACC	100	Introduction to Accounting	5
			30

		Semester II	
ENG	100	Language & Communication	5
MATH	114	Business Mathematics	5
LAW	200	Business Law	5
MARK	101	The Sales Aspects of Marketing	5
MARK	201	Distribution Channels	5
			30

PROGRAM: Secretarial Science - General
LOCATION: Teraulay Campus
LENGTH: 2 Years
CERTIFICATION: Diploma
PREREQUISITE: Ontario Secondary School Graduation Diploma or equivalent; no previous knowledge of shorthand or typewriting is required. Holders of a Secondary School Graduation Diploma who can provide a statement to indicate that they can type at the rate of 45 wpm and can take Pitman or machine shorthand at 80 wpm may enter the third semester of this program. Direct entry applicants must be prepared to take a test to substantiate the necessary skill speeds, prior to registration.

GBC CODE: B105
FEE: $260 per year

The graduates of the two-year general secretarial program will have developed the necessary skills in shorthand and typewriting; they will also have covered the related secretarial duty areas in sufficient depth to meet the decision-making ability of a competent secretary in business.

Credit will be given to students with typing and shorthand skills, thus enabling them to shorten or enrich (through options) their programs.

FIRST YEAR		Semester I	Hours per week
ENG	100	Language & Communication	5
MATH	113	Business Mathematics	3
OP	100	Typewriting	7
SH	100	Shorthand (Pitman or machine)	10
		Option	5
			30

FIRST YEAR		Semester II	
ENG	104	Business Communication	5
OP	101	Typewriting & Office Practice	10
SH	101	Shorthand (Pitman or machine)	10
		Option	5
			30

SECOND YEAR		Semester III	
ENG	201	English & The Business World	5
BUS	100	Business Organization	3
ACC	105	Secretarial Accounting	2
SH	200	Shorthand	10
OP	200	Secretarial Procedures	10
			30

SECOND YEAR		Semester IV	
ENG	204	Business Communications	5
LAW	105	Business Law	3
SH	201	Applied Stenography	10
OP	201	Secretarial Practice	10
DIC	105	Dictaphone	2
			30

PROGRAM: Secretarial Science - Legal GBC CODE: B106
LOCATION: Teraulay Campus FEE: $260 per year
LENGTH: 2 Years
CERTIFICATION: Diploma
PREREQUISITE: Ontario Secondary School Graduation Diploma or equivalent; no previous knowledge of shorthand or typewriting is requir. Holders of a Secondary School Graduation Diploma who can provide a statement to indicate that they can type at the rate of 45 wpm and can take Pitman or machine shorthand at 80 wpm may enter the third semester of this program. Direct entry applicants must be prepared to take a test to substantiate the necessary skill speeds, prior to registration.

This program provides the skills and knowledge required for successful entry into legal secretarial positions.

FIRST YEAR		Semester I	Hours per week
ENG	100	Language & Communication	5
MATH	113	Business Mathematics	3
OP	100	Typewriting	7
SH	100	Shorthand (Pitman or machine)	10
		Option	5
			30

FIRST YEAR		Semester II	
ENG	104	Business Communications	5
OP	101	Typewriting & Office Practice	10
SH	101	Shorthand (Pitman or machine)	10
		Option	5
			30

SECOND YEAR		Semester III	
ENG	201	English & The Business World	5
LAW	202	Business Law	5
OP	202	Legal Office Practice	5
SH	202	Legal Shorthand	10
		Option	5
			30

SECOND YEAR		Semester IV	
ENG	204	Business Communication	5
LAW	203	Business Law	5
OP	203	Legal Office Practice	5
SH	203	Legal Shorthand	7
ACC	106	Legal Accounting	3
		Option	5
			30

PROGRAM: Secretarial Science (Medical) GBC CODE: B107
LOCATION: Teraulay Campus FEE: $260 per year
LENGTH: 2 Years
CERTIFICATION: Diploma
PREREQUISITE: Ontario Secondary School Graduation Diploma or equivalent; no previous knowledge of shorthand or typewriting is required. Holders of a Secondary School Graduation Diploma who can provide a statement to indicate that they can type at the rate of 45 wpm and can take Pitman or machine shorthand at 80 wpm may enter the third semester of the medical shorthand program. Entry is gained to the medical dicta program only in semester III, by holding a grade 12 certificate and possessing the ability to type at a minimum of 45 wpm. Direct entry applicants must be prepared to take a test to substantiate the necessary skill, prior to registration.

This program is designed to train medical secretaries and medical dictatypists for positions in their respective fields.

FIRST YEAR		Semester I	Hours per week
ENG	100	Language & Communication	5
MATH	113	Business Mathematics	3
OP	100	Typewriting	7
SH	100	Shorthand (Pitman or machine)	10
		Option	5
			30

		Semester II	
ENG	104	Business Communication	5
OP	101	Typewriting & Office Practice	10
SH	101	Shorthand (Pitman or machine)	10
		Option	5
			30

SECOND YEAR		Semester III (Medical Shorthand Program)	
ENG	201	English & the Business World	5
OP	204	Medical Office Practice	5
SH	204	Medical Shorthand	10
ANAT	100	Anatomy & Physiology	5
		Option	5
			30

PROGRAM: Secretarial Science (Medical) Continued

SECOND YEAR		Semester IV	Hours per week
ENG	204	Business Communication	5
OP	205	Medical Office Practice	5
SH	205	Medical Shorthand	7
ANAT	100	Anatomy & Physiology	5
ACC	107	Medical Accounting	3
		Option	5
			30

OR

SECOND YEAR		Semester III (Medical Dictaphone Program)	
ENG	201	English & the Business World	5
OP	204	Medical Office Practice	5
DIC	200	Medical Dictaphone	8
ANAT	100	Anatomy & Physiology	5
ANAT	101	Medical Terminology	2
		Option	5
			30

Semester IV

ENG	204	Business Communication	5
OP	205	Medical Office Practice	5
DIC	201	Medical Dictaphone	5
ANAT	100	Anatomy & Physiology	5
ANAT	101	Medical Terminology	2
ACC	107	Medical Accounting	3
		Option	5
			30

PROGRAM: Acoustics Technician GBC CODE: EL104
LOCATION: Teraulay Campus FEE: $260 per year
LENGTH: 2 Years
CERTIFICATION: Diploma
PREREQUISITE: The Ontario Secondary School Graduation Diploma or its equivalent

To train students in principles of acoustic design, the techniques of sound analysis and modern practices of noise control. In general, the specialization phase of this (2nd year) is designed to fit the graduate into the consulting engineering office or the architects' office in the acoustics and vibration sections. Also, the graduate will fit into the sales organization of those firms specializing in noise abatement materials and procedures and to some degree, the graduate could fit into the audio recording field as a sound technician.

			Periods per week	Credit Units per Semester
Semester I (15 weeks)				
ELTC	106	Electrical Fundamentals I	1	1
ELTC	107	Electrical Fundamentals II	1	1
ELTC	100	Electronic Fundamentals	1	1
ELTC	101	Electrical Fundamentals Advanced	5	5
ELTC	120	Electronic Drafting Fundamentals	3	2
ENG	100	Language & Communication	2	2
INST	108	Instrumentation Fundamentals	6	5
ELTC	111A	Applied Circuit Analysis I	4	4
ELTC	112A	Laboratory	8	4
			31	25
Semester II (19 weeks)				
ELTC	102	Electronic Fundamentals	3	3
ELTC	103	Amplifiers and Devices	4	4
ELTC	108	AM/FM Receivers	3	3
ELTC	105	T.V. Principles	3	3
ELTC	111B	Applied Circuit Analysis II	4	4
ELTC	109	Electronic Drafting	3	2
ENG	101	Language & Communication	2	2
ELTC	112B	Laboratory	9	4
			31	25
Semester III (17 weeks)				
ACOU	200	Introduction to Acoustics	3	3
ACOU	213	Sound Laboratory	6	3
ACOU	205A	Acoustic Properties of Materials	2	2
ACOU	211A	Building Acoustics	3	3
ACOU	201A	Noise Analysis & Control	3	3
ELTC	211	Audio Principles	3	3
MATH	201	Mathematics	3	3
ENG	200	Language & Communication	2	2
ELTC	217	Electronic Laboratory	2	1
ELTC	218	Electronic Instrumentation	4	4
			31	27

PROGRAM: Acoustics Technician (Continued)

Semester IV (17 weeks)

			Periods per week	Credit Units per Semester
ACOU	203	Vibration & Shock Analysis	2	2
ACOU	213	Sound Laboratory	8	4
ACOU	205B	Acoustic Properties of Materials	2	2
ACOU	211B	Building Acoustics	3	3
ACOU	201B	Noise Analysis & Control Part II	3	3
ACOU	206	Noise Control Standards	1	1
MATH	202	Mathematics	3	3
ENG	201	Language & Communication	2	2
ACOU	214	Drafting	5	3
BUS	100	Business Organization	2	2
			31	25

PROGRAM: Design Technician - Electrical GBC CODE: EL101
LOCATION: Casa Loma Campus FEE: $260 per year
LENGTH: 2 Years
CERTIFICATION: Diploma
PREREQUISITE: Ontario Secondary School Graduation Diploma or equivalent

This program offers the drafting skills, combined with an adequate theoretical base, practical knowledge, and workshop competence to provide a background for the electrical design technician. Electrical design technicians are employed by local, provincial and federal government departments; municipal, and provincial hydro-electric systems, manufacturing companies, consulting engineering firms, and construction companies.

Semester I (15 week module)

		Hours per week
EL111	Electrical Fundamentals	8
EL112	Electrical Machines Fundamentals	4
EL113	Electronic Fundamentals	4
EL114	Electrical Drafting I	3
EL115	Applied Circuit Analysis I	4
ENG100	Language & Communication	2
INST108	Intrumentation Fundamentals	6
		31

Semester II (19 week module)

EL121	Direct Current Machines	5
EL122	Electrical Circuits	7
EL123	Electrical Drafting II	4
EL124	Applied Circuit Analysis II	4
EL126	Electrical Control Systems	5
EL125	Electrical Environmental Systems	3
ENG100	Language & Communication	2
		30

Semester III (15 week module)

EL234	Electrical Distribution Systems	4
EL235	Industrial Electronic Fundamentals	8
EL236	Protection of Electrical Equipment	4
EL237	Electrical Drafting III	4
MECH100	Mechanisms & Mechanics	4
MATH200	Mathematics	4
ENG200	Language & Communication	2
		30

PROGRAM: Design Technician - Electrical (Continued)

Semester IV (19 week module)		Hours per week
EL247	Electrical Design Application	16
EL248	Architectural & Mechanical Blue Print Reading & Drafting	3
EL244	Wiring Methods, Code & Materials	3
EL249	Electrical Specification Writing	2
MATH200	Mathematics	4
ENG200	Language & Communication	2
		30

PROGRAM: Electrical Technician GBC CODE: EL102
LOCATION: Casa Loma Campus FEE: $260 per year
LENGTH: 2 Years
CERTIFICATION: Diploma
PREREQUISITE: Ontario Secondary School Graduation Diploma or its equivalent

This program is designed to provide the theory, skills and knowledge of industrial practices required of an electrical technician. The course has been designed about a common first year, and a second year which allows the student to specialize in an area of greatest interest to him. The areas of specialization are electrical apparatus, industrial electronics systems. Opportunities for employment are found in the fields of electrical generation and distribution, communications, manufacturing, and building. Graduates are employed as draftsmen, servicemen, operators, and inspectors.

Semester I (15 week module)		Hours per week
EL111	Electrical Fundamentals	8
EL112	Electrical Machine Fundamentals	4
EL113	Electronic Fundamentals	4
EL114	Electrical Drafting I	3
EL115	Applied Circuit Analysis I	4
ENG100	Language & Communication	2
INST108	Instrumentation Fundamentals	6
		31

Semester II (19 week module)		
EL121	Direct Current Machines	5
EL122	Electrical Circuits	7
EL123	Electrical Drafting II	4
EL124	Applied Circuit Analysis II	4
EL126	Electrical Control Systems	5
EL125	Electrical Environmental Systems	3
ENG100	Language & Communication	2
		30

Semester III (15 week module)		
EL234	Electrical Distribution Systems	6
EL235	Industrial Electronic Fundamentals	6
EL236	Protection of Electrical Equipment	4
EL237	Electrical Drafting III	4
MECH103	Mechanisms & Mechanics	4
MATH200	Mathematics	4
ENG200	Language & Communication	2
		30

PROGRAM: Electrical Technician (Continued)

Semester IV (19 week module)		Hours per week
**EL	Electrical Elective	16
EL243	Electrical Drafting IV	4
EL244	Wiring Methods & Electrical Code	3
EL245	Introduction to Computer Programming	1
MATH200	Mathematics	4
ENG200	Language & Communication	2
		30

**EL Electrical Electives

In Semester IV the student specializes in his choice of:

EL241	Industrial Electronic Control Systems
EL242	Electrical Apparatus

PROGRAM: Electrical Technologist
GBC CODE: EL106
LOCATION: Casa Loma Campus
FEE: $260 per year
LENGTH: 3 year program completed in 2 yrs.
CERTIFICATION: Diploma
PREREQUISITE: Ontario Secondary School Graduation Diploma or its equivalent

This program is designed to provide the theory, skills, and knowledge of industrial practices required of an electrical technologist. The program comprises six 15-week modules. Employment opportunities exist in engineering, electrical power distribution, technical sales, and manufacturing.

Semester I (15 week module)		Hours per week
EL111	Electrical Fundamentals	8
EL112	Electrical Machines Fundamentals	4
EL113	Electronic Fundamentals	4
EL114	Electrical Drafting I	3
EL115	Applied Circuit Analysis I	4
ENG100	Language and Communication	2
INST108	Instrumentation Fundamentals	6
		31

Semester II (15 week module)		
EL121T	Direct Current machines	7
EL122T	Electrical Circuits	8
EL123T	Electrical Drafting II	4
EL124T	Applied Circuit Analysis II	4
ENG100	Language & Communication	3
MECH103T	Mechanics & Mechanisms	4
		30

Semester III (15 week module)		
EL126T	Electrical Control Systems	6
EL232T	Alternating Current Machines	13
EL233T	Blue Print Reading	2
MATH200T	Mathematics	5
EC100T	Economics	4
		30

Semester IV (15 week module)		
EL234T	Electrical Distribution Systems	4
EL235T	Industrial Electronic Fundamentals	8
EL236T	Protection of Electrical Equipment	4
EL244	Wiring Methods & Code	3
EL237T	Electrical Drafting III	4
MATH300	Mathematics	5
ENG200	Language & Communication	2
		30

PROGRAM: Electrical Technologist (Continued)

Semester V (15 week module)		Hours per week
EL351	Industrial Electronic Control Systems	15
EL352	Electrical Environmental Systems	4
EL353T	Electrical Drafting IV	4
MATH400	Mathematics	5
ENG300T	Technical Report Writing	3
		31

Semester VI (15 week module)		
EL245T	Introduction to Computer Programming	1
EL362	Electronic Instruments	5
EL363	Servo Controls	10
EL364	Machine Design	8
EL365	Electrical Estimating	2
PHYS 200T	Modern Physics	4
		30

PROGRAM: Electronics General
LOCATION: Teraulay Campus
LENGTH: 1 Year (48 weeks)
CERTIFICATION: Certificate
PREREQUISITE: Ontario Secondary School Grade 10 or its equivalent
GBC CODE: EL541
FEE: $5 per week

The theory in this program is developed so that the principles involved in various circuits, modules and systems can be applied to all types of electronic equipment, both domestic and commercial. To complement the theory, practical sessions in the laboratory are given on domestic equipment such as the radio, television, hi-fi and the record changer. With this background, the graduate of this course is equipped to work effectively as a service technician in all electronic manufacturing companies, retail radio and television stores and in the small radio and television repair shop.

Semester I

ELTC 530	Electrical & Electronic Fundamentals
ELTC 531	Semi-Conductors Devices and Circuits
ELTS 532	Radio Hi-Fi, and Sound Systems
ELTC 533	Fundamentals Laboratory
ELTC 540	Passive Circuit Analysis
ELTC 541	Audio Principles
ELTC 542A	Basic Construction Techniques
ELTC 543A	Electro Mechanical Devices
ENG 530	Language & Communication

Semester II

ELTC 534	Pulse and Digital Circuits
ELTC 535	Television Receiver Circuits and Systems
ELTC 536	Colour Television and F.M. Multiplex
ELTC 537	Radio and Television Laboratory
ELTC 544	Video Principles
ELTC 545	Active Circuit Analysis
ELTC 542B	Basic Construction Techniques
ELTC 543B	Electro Mechanical Devices
ENG 530	Language & Communication

PROGRAM: Colour Television
LOCATION: Teraulay Campus
LENGTH: 10 Weeks
CERTIFICATION: Certificate
PREREQUISITE: Good background training and experience in electronics, with some exposure to black and white T.V.
GBC CODE: EL571
FEE: $5 per week

Graduates from this program have prepared themselves for employment in the TV repair field, either in the small shop as service technicians, or in the factory as troubleshooters.

ELTC531	Semi conductor devices & circuits (incl parts from ELTC534)
ELTC536	Colour Television & F.M. Multiplex (incl parts from ELTC532)
ELTC537	Radio and Television Laboratory

PROGRAM: Electronics Technician
LOCATION: Teraulay Campus
LENGTH: 2 Years
CERTIFICATION: Diploma
PREREQUISITE: Ontario Secondary School Graduation Diploma or its equivalent

GBC CODE: EL103
FEE: $260 per year

This course is designed to provide Engineering Technicians to work in the maintenance, installation, production, design or research phases of the Electronics industry. In order to better qualify the student of this course for immediate productive work in industry upon graduation, the course has been designed about a common first year and a second year which allows the student to specialize in an area of greatest interest to him. The areas of specialization are: Communications, Computers, ETV/TV Broadcast. Graduates of this course are now employed in research and engineering departments of government and industry, in utility companies, in radio and television broadcasting, in closed circuit television studios, in the oil industry and in computer and communications system installation.

			Periods per week	Credit Units per Semester
Semester I (15 weeks)				
ELTC	106	Electrical Fundamentals I	1	1
ELTC	107	Electrical Fundamentals II	1	1
ELTC	100	Electronic Fundamentals I	1	1
ELTC	101	Electrical Fundamentals Advanced	5	5
ELTC	120	Drafting Fundamentals I	3	2
ENG	100	Language & Communication	2	2
INST	108	Instrumentation Fundamentals	6	5
ELTC	111A	Applied Circuit Analysis I	4	4
ELTC	112A	Laboratory	8	4
			31	25
Semester II (19 weeks)				
ELTC	102	Electronic Fundamentals Advanced	3	3
ELTC	103	Amplifiers and Devices	4	4
ELTC	108	AM/FM Receivers	3	3
ELTC	105	T.V. Principles	3	3
ELTC	111B	Applied Circuit Analysis II	4	4
ELTC	109	Drafting Fundamentals II	3	2
ENG	100	Language & Communication	2	2
ELTC	112B	Laboratory	9	4
			31	25
Semester III (17 weeks)				
ELTC	207	Advanced Semi-conductor Devices	4	4
ELTC	208	Pulse Circuits	4	4
ELTC	209A	Laboratory	9	4
ELTC	210	Digital Principles	3	3
ELTC	211	Audio Principles	3	3
ELTC	212	Video Principles	3	3
MATH	201	Mathematics	3	3
ENG	200	Language & Communication	2	2
			31	26

PROGRAM: Electronics Technician (Continued)

			Periods per week	Credit Units per Semester
Semester IV (17 weeks)				
ELTC	213	Communication Principles	3	3
ELTC	203	Computer Aided Design	1	1
ELTC	209B	Laboratory	9	4
MATH	202	Mathematics	3	3
ENG	200	Language & Communication	2	2
EC	100	Economics	3	3
MECH	202	Mechanisms	3	3
		Area of Specialization (ONE ONLY)		
ELTC	215	Communication Systems	7	7
		OR		
ELTC	216	Computer Systems	7	7
		OR		
ELTC	219	ETV/TV Broadcast System	7	7
			31	26

PROGRAM: Electronics Technologist GBC CODE: EL105
LOCATION: Teraulay Campus FEE: $260 per year
LENGTH: 6 semesters taught in 2 years
CERTIFICATION: Diploma
PREREQUISITE: Ontario Secondary School Graduation Diploma or its equivale

Semester I (15 weeks)

			Periods per week	Credit Units per Semester
ELTC	106	Electrical Fundamentals I	1	1
ELTC	107	Electrical Fundamentals II	1	1
ELTC	100	Electronics Fundamentals I	1	1
ELTC	101	Electrical Fundamentals Advanced	5	5
ELTC	120	Drafting Fundamentals I	3	2
INST	108	Instrumentation Fundamentals	6	5
ENG	100	Language & Communication	2	2
ELTC	111A	Applied Circuit Analysis I	4	4
ELTC	112A	Laboratory	8	4
			31	25

Semester II (15 weeks)

ELTC	102T	Electronic Fundamentals Advanced	6	5
ELTC	103T	Amplifiers and Devices	9	7.5
ELTC	104	Advanced Transistors	6	5
ELTC	105	Drafting Fundamentals II	3	1.5
ENG	100	Language & Communication	2	2
MATH	102T	Mathematics	3	3
ELTC	111T	Applied Circuit Analysis	2	2
			31	26

Semester III (15 weeks)

ELTC	200	AM/FM Receiver Technology	6	5
ELTC	201	Wave Shaping and Control Devices	7	5.5
ELTC	202	Logic Systems	7	5.5
MATH	201T	Mathematics	5	5
PHYS	201T	Physics	3	3
ENG	200	Language & Communication or Elective	2	2
			30	26

Semester IV (15 weeks)

ELTC	203T	Computer Aided Instruction	4	3
ELTC	204	Solid State Design	8	6
ELTC	205	Communication Technology I	8	6
ELTC	304A	System Design Principle Part I	1	1
MATH	202T	Mathematics	5	5
PHYS	202T	Physics	3	3
ENG	200	Language & Communication or Elective	2	2
			31	26

PROGRAM: Electronics Technologist (Continued)

Semester V (15 weeks)

			Periods per week	Credit Units per Semester
ELTC	300	Pulse Technology	8	6
ELTC	301	Communication Technology II	8	6
ELTC	302	Computer Technology	8	6
MATH	301T	Mathematics	5	5
ENG	300T	Report Writing	2	2
			31	25

Semester VI (15 weeks)

ELTC	303	Automatic Controls Systems	9	7
ELTC	304B	Systems Design Principles Part II	6	3.5
ELTC	305	Electronic Mechanical Design Principle	3	2
ELTC	306	Component Technology	5	4
BUS	100	Business Organization	3	3
MECH	302T	Mechanic & Mechanism	4	4
			30	23.5

PROGRAM: Business Equipment Servicing GBC CODE: EN541
LOCATION: Casa Loma Campus FEE: $5 per week
LENGTH: 48 Weeks
CERTIFICATION: Certificate
PREREQUISITE: Ontario Secondary School Graduation Diploma (preferably) or Ontario Grade 10 and satisfactory completion of specific aptitude tests or equivalent.

This program is designed to provide theoretical and practical knowledge of manual and electric typewriters, electric and electronic calculators, photo copy and dictating machines.

A business machine representative analyses and solves problems which occur on business equipment and assists customers to operate machines in a proper manner. The prospective representative should display a good mechanical aptitude, be neat and presentable, and be able to co-operate with other people. He should possess a current driving licence.

Because machines are increasing in number and in complexity, prospects in this occupation are excellent for the man who is ambitious and capable of working with a minimum of supervision.

Semesters I & II

BES	500	Typewriters
BES	501	Figuring Machines
BES	502	Photocopying Machines
BES	503	Dictating Machines
ELTC	530	Electrical & Electronic Fundamentals
MATH	531	Mathematics
ENG	530	Language & Communication

Semester III

ELTC	540	Logic Fundamentals
ELTC	541	Fundamentals Laboratory
ELTC	542	Business Machines

PROGRAM: Blueprint Reading for Welders GBC CODE: EN576
LOCATION: Casa Loma Campus FEE: $5 per week
LENGTH: 16 Weeks
CERTIFICATION: Certificate
PREREQUISITE: Ontario Grade 8, or equivalent.

This program was developed specifically for the welder wishing to broaden his employment capability. Upon completion of the program, the welder will know the basic language of drafting standards for welding detail and assembly drawings, and will have gained experience in pattern developments, welding symbols, and dimensioning procedures. The reading of up to date blueprints is extensively practised throughout this program.

ENDR	559	Blueprint Reading
MATH	515	Mathematics
ENG	515	Language & Communication

PROGRAM: Coatings Technician GBC CODE: EN109
LOCATION: Casa Loma Campus FEE: $260 per year
LENGTH: 2 Years
CERTIFICATION: Diploma
PREREQUISITE: Ontario Secondary School Graduation Diploma or equivalent.

This program has been designed in conjunction with representative committees of the paint and coatings industry to prepare students to enter technical, production, sales and junior management areas of the industry. After a minimum of two years' industrial experience, the graduate will be eligible to apply to the Paint Industry Education Bureau for recognition as a paint technologist.

FIRST YEAR Semester I		Hours per week
CHEM	110 Chemistry	3
MATH	100 Mathematics	5
PHYS	110 Physics	2
ENG	100 Lang. & Communication	3
ENDR	105 Drafting	3
EC	112 Business Organization	1
CHEM	113 Organic Chemistry	3
COAT	100 Basic Paint Technology	7
PL	100 Thermoplastics	3
		30

FIRST YEAR Semester II		
CHEM	110 Chemistry	3
MATH	100 Mathematics	3
PHYS	110 Physics	2
ENG	100 Lang. & Communication	3
PL	100 Thermoplastics	3
ENDR	105 Drafting	3
EC	112 Business Organization	1
CHEM	111 Analytical Chemistry	3
COAT	100 Basic Paint Technology	7
MATH	120 Applied Computer Prog.	2
		30

SECOND YEAR Semester III		
CHEM	210 Polymer Chemistry	4
MATH	200 Mathematics	4
PHYS	210 Physics	2
ENG	200 Lang. & Communication	3
EC	212 Business Organization	1
COAT	202 Thermoplastic Resins	3
COAT	203 Thermoset Resins	2
COAT	201 Coatings Lab	6
COAT	200 Coatings Technology	3
CHEM	203 Organic Chemistry Lab	2
		30

SECOND YEAR Semester IV		
CHEM	210 Polymer Chemistry	4
MATH	200 Mathematics	4
PHYS	210 Physics	2
ENG	200 Lang. & Communication	3
EC	212 Business Organization	1
COAT	202 Thermoplastic Resins	3
COAT	203 Thermoset Resins	2
COAT	201 Coatings Lab	6
COAT	200 Coatings Technology	3
CHEM	212 Industrial Chemistry	2
		30

PROGRAM: Industrial Instrumentation Mechanic GBC CODE: EN542
LOCATION: Kensington Campus FEE: $5 per week
LENGTH: 40 Weeks
CERTIFICATION: Certificate
PREREQUISITE: Ontario Grade 10 or equivalent.

The industrial instrumentation mechanic program operates under the individualized learning concept. This means that a student is allowed to progress at his own learning rate in order to achieve the program objective. Student intakes are continuous.

Instrument mechanics are employed in all phases of industry, particularly in the construction of new plants. Instrument mechanics install, calibrate, and maintain all types of pneumatic and electronic process instruments.

INST	530	Pressure Measurement
INST	530	Flow Measurement
INST	530	Level Measurement
INST	530	Temperature Measurement
INST	530	Pneumatic Theory & Instruments
INST	530	Pneumatic Instrument Application
INST	530	Control Theory & Systems
ENG	530	Language & Communication
INST	531	D.C. Theory
INST	531	A.C. Theory
INST	531	Transistor & Electron Tube Theory
INST	531	Electronic Circuits
INST	531	Electrical & Electronic Instruments
INST	531	Electrical & Electronic Instrument Application
INST	532	Valves
INST	532	Mechanical Practices
MATH	532	Mathematics
INST	533	Analytical Instrumentation
ENDR	537	Applied Drawing

PROGRAM: Industrial Instrumentation Technician GBC CODE: EN101
LOCATION: Kensington Campus
LENGTH: 2 years FEE: $260 per year
CERTIFICATION: Diploma
PREREQUISITE: O.S.S.G.D. or equivalent

Industrial instrumentation represents one of the key areas in the field of automation.

Instrumentation technicians are employed in all phases of industry that utilize automatic controls.

Successful candidates of the first semester may make application to enter the industrial instrumentation technology program.

	Semester I	Hours per week
INST103	A.C. - D.C. Theory & Lab	8
INST102	Piping & Instrument Lab Techniques	4
INST108	Instrumentation Fundamentals	6
MATH100	Mathematics	4
ENDR105	Technical Drawing	4
ENG100	Language & Communication	2
MECH102	Machines & Dynamics	4
		32

	Semester II	
INST100	Measuring Principles	7
INST101	Electronic Instrumentation	7
INST106	Electronics Theory & Lab	6
MATH100	Mathematics	4
ENG100	Language & Communication	2
PHYS100	Applied Physics	4
		30

	Semester III	
INST200	Automatic Control Principles I	8
INST201	Final Control Elements	6
INST204	Applied Solid State Electronics	6
MATH200	Mathematics	4
EC100	Economics	2
ENG200	Language & Communication	2
CHEM100	Applied Chemistry	2
		30

	Semester IV	
INST202	Analytical & Environmental Instrumentation	6
INST203	Computer Control Principles I	8
INST204	Applied Solid State Electronics	6
MATH200	Mathematics	4
EC100	Economics	2
ENG200	Language & Communication	2
CHEM100	Applied Chemistry	2
		30

PROGRAM: Industrial Instrumentation Technologist GBC CODE: EN114
LOCATION: Kensington Campus FEE: $260 per
LENGTH: 2 Years (6 semesters)
CERTIFICATION: Diploma
PREREQUISITE: Ontario Secondary School Graduation Diploma or equivalent.

The instrumentation technologists' role in industry is primarily in design and systems modification.

Job opportunities range from challenging positions in research and development to positions in sales and service for instrument manufacturers.

Semester I			Hours per week
INST	102	Piping & Instrument Lab Techniques	4
INST	103	A.C. - D.C. Theory & Lab	8
INST	108	Instrumentation Fundamentals	6
MATH	100	Mathematics	4
ENDR	105	Technical Drawing	4
ENG	100	Language & Communication	2
MECH	102	Machines & Dynamics	4
			32

Semester II			
INST	100	Measuring Principles	7
INST	101	Electronic Instrumentation	7
INST	106	Electronics Theory & Lab	6
MATH	100	Mathematics	4
ENG	100	Language & Communication	2
PHYS	100	Applied Physics	4
			30

Semester III			
INST	104	Telemetering	4
INST	107	Electrical Fixed Logic Lab	4
INST	108	Systems Design & Fabrication	16
MATH	200T	Mathematics	4
			30

Semester IV			
INST	200	Auto Controls Principles I	8
INST	201	Final Control Elements	6
INST	204	Applied Solid State Electronics	6
MATH	200T	Mathematics	4
EC	100	Economics	2
PHYS	200	Modern Physics	2
CHEM	100	Physical Chemistry	2
ENG	200	Language & Communication	2
			32

PROGRAM: Industrial Instrumentation Technologist (Continued)

Semester V			Hours per week
INST	202	Analytical & Environmental Instrumentation	6
INST	203	Computer Control Principles I	8
INST	204	Applied Solid State Electronics	6
MATH	300	Mathematics	4
EC	100	Economics	2
PHYS	200	Modern Physics	2
CHEM	200	Organic & Inorganic	2
ENG	200	Language & Communication	2
			32

Semester VI			
INST	300	Automatic Control Principles II	9
INST	301	Computer Control Principles II	9
INST	302	Systems Design & Construction	4
CHEM	300	Industrial Chemistry	4
MATH	300	Mathematics	4
			30

PROGRAM: Lathe Operator
LOCATION: Casa Loma Campus
LENGTH: 1 Session (12 Weeks)
CERTIFICATION: Certificate
PREREQUISITE: Ontario Grade 10 or equivalent

GBC CODE: EN575
FEE: $5 per week

This program is designed to prepare students for entry into industry as lathe operators. Persons who have completed grade 12 and have an interest in the machine tool industry will find this program most suitable as preparation for initial employment as a toolroom or production lathe hand.

MACH	537	Small Tools & Measurement
MACH	538	Lathe & Ancillary Equipment
ENDR	570	Blueprint Reading
MATH	533	Mathematics

PROGRAM: Machine Shop Practice
LOCATION: Casa Loma Campus
LENGTH: 1 Year (40 Weeks)
CERTIFICATION: Certificate
PREREQUISITE: Ontario Grade 10 or equivalent.

GBC CODE: EN544
FEE: $200

This program is designed to prepare students for entry into industry as machinists, apprentices, or machine operators. The category in which a student finds employment depends upon his age, previous experience, and the levels of skill and knowledge which he has acquired. Students find it advantageous to have completed grade 12 in machine shop but, with suitable aptitudes and a willingness to work hard, those who have completed grade 10 may prove successful in the program and later become good machinists.

Instruction is particularly concerned with measurement and machining to close tolerances, combined with production speeds and efficiencies of manufacture, sharpening cutting tools, and setting up machines.

Semester I & II

MACH	540	Benchwork
MACH	541	Lathework
MACH	542	Milling and Shaping
MACH	543	Grinding
MACH	545	Numerical Control
WELD	545	Welding
WELD	546	Welding
ENDR	574	Blueprint Reading
MET	532	Metallurgy
MATH	536	Mathematics
PHYS	540	Physics
ENG	530	Language & Communication

PROGRAM: Machine & Product Design (Mechanical Drafting)
LOCATION: Casa Loma Campus
LENGTH: 2 years
CERTIFICATION: Diploma
PREREQUISITE: Ontario Secondary School Graduation Diploma of a 4-or 5-year program, or equivalent. Drafting and shop options would be an asset.

GBC CODE: EN105
FEE: $260 per year

Machines, mechanical devices, and products of greatly sophisticated design are characteristic of modern industry. The design drawings, schematics, detail drawings, and assembly drawings for these machines and products are drawn by machine design or product design draftsmen. Through this program the student can gain the theoretical and practical knowledge which is required by draftsmen in manufacturing companies and other industrial organizations in the general mechanical field.

Graduates may be employed as draftsmen, designers, process planners, salesmen, or estimators by manufacturing industries, consulting engineers and government departments.

FIRST YEAR	Semester I	Hours per week
ENDR118	Descriptive Geometry	3
ENDR158	Drafting & Design	12
MATH100	Mathematics	5
ENG100	Language & Communication	2
MECH100	Mechanics	3
MET100	Metallurgy	2
MECH110	Workshop Technology	4
		31
	Semester II	
ENDR102	Machine Drawing & Design	10
ENDR118	Descriptive Geometry	3
MATH100	Mathematics	3
ENG100	Language & Communication	2
MECH100	Mechanics	3
MET100	Metallurgy	2
ENDR107	Kinematics	2
MACH110	Workshop Technology	4
MATH120	Applied Computer Programming	2
		32
SECOND YEAR	**Semester III**	
ENDR201	Drawing & Product Design	10
ENDR107	Kinematics	2
ENDR222	Descriptive Geometry	3
MATH200	Mathematics	4
MECH110	Mechanics of Materials	2
EL305	Machine Circuits & Apparatus	2
ENG200	Language & Communication	2
ENDR202	Manufacturing Processes	2
ENDR255	Machine Tool Theory	4
		31

PROGRAM: Machine & Product Design (Mechanical Drafting) (Continued)

Semester IV

ENDR201	Drawing & Product Design	10
ENDR107	Kinematics	2
ENDR222	Descriptive Geometry	3
ENDR241	Tool Design Theory	2
EL305	Machine Circuits & Apparatus	2
WELD148	Welding	3
MATH200	Mathematics	4
MECH110	Mechanics of Materials	2
Eng200	Language & Communication	2
		30

PROGRAM: Materials Handling Design GBC CODE: EN107
LOCATION: Casa Loma Campus
LENGTH: 2 years FEE: $260 per year
CERTIFICATION: Diploma
PREREQUISITE: O.S.S.G.D. of a 4- or 5-year program, or equivalent. Drafting and shop options would be an asset.

Employment opportunities: Increasing automation and the application of modern packaging and handling techniques resulted in the development of the specialized field of materials handling design. The plant layouts, estimates, schematics, assembly and detail drawings of handling equipment and systems are produced by designers and draftsmen trained in the many facets of materials handling design. This program provides the student with theoretical and practical knowledge sufficient to enable him to enter the materials handling design field. Graduates may be employed as draftsmen, designers, salesmen, estimators or planners by processing and manufacturing plants, consulting engineers, primary industries and research and development companies.

FIRST YEAR	Semester I	Hours per week
ENDR118	Descriptive Geometry	3
ENDR158	Drafting & Design	12
MATH100	Mathematics	5
ENG100	Language & Communication	2
MECH100	Mechanics	3
MET100	Metallurgy	2
MACH110	Workshop Technology	4
		31
	Semester II	
ENDR118	Descriptive Geometry	3
ENDR123	Engineering Drawing & Design	10
ENDR115	Structural Drafting	3
MECH100	Mechanics	3
MATH100	Mathematics	3
ENG100	Language & Communication	2
MET100	Metallurgy	2
MACH110	Workshop Technology	4
MATH120	Applied Computer Programming	2
		32
SECOND YEAR	Semester III	
ENDR112	Plant Layout & Handling Design	10
ENDR222	Descriptive Geometry	4
MECH110	Mechanics of Materials	2
ENDR250	Industrial Engineering	2
MATH200	Mathematics	4
ENG200	Language & Communication	2
EL106	Electrical & Electronic Fundamentals	4
PHYS100	Physics	2
		30
	Semester IV	
ENDR112	Plant Layout & Handling Design	10
ENDR222	Descriptive Geometry	4
MECH110	Mechanics of Materials	2
ENDR250	Industrial Engineering	2
MATH200	Mathematics	4
ENG200	Language & Communication	2
INST107	Applied Control Theory	4
PHYS100	Physics	2
		30

PROGRAM: Mechanical Engineering Drafting GBC CODE: EN560
LOCATION: Casa Loma Campus FEE: $5 per week
LENGTH: 1 year
CERTIFICATION: Certificate
PREREQUISITE: Ontario Grade 10 with competence in mathematics and science, or equivalent.

The objective of this program is to prepare the student for employment as a junior draftsman in the general mechanical engineering field. The graduate will be competent in detail drawing, assembly drawing, freehand sketching and the construction of engineering graphs and charts. He will gain acceptance in the drawing offices of manufacturing companies, consulting engineers, process piping engineers, tool design consultants, and materials handling engineers. The broad training given in this program will enable the graduate to fill other technical positions where competence in drawing is required, such as engineering office clerk, technical salesman, parts inspector, and production expediter.

Note: A similar program is offered in Architectural Technology, AR540.

Semester I

ENDR500	Mechanical Drawing
ENDR508	Descriptive Geometry
ENDR509	Materials Handling
MACH544	Machine Shop Practice
MATH550	Mathematics
ENG521	Language & Communication

Semester II

ENDR501	Machine Drawing
ENDR508	Descriptive Geometry
ENDR510	Process Piping
ENDR511	Methods, Tooling & Materials
MACH544	Machine Shop Practice
MATH550	Mathematics
ENG521	Language & Communication

PROGRAM: Operator - Thermoset (Hand Lay-up) GBC CODE: EN747
LOCATION: Casa Loma Campus FEE: $135
LENGTH: 1 Semester
CERTIFICATION: Certificate
PREREQUISITE: Ontario Grade 10 with drafting

			Hours per week
PL	732	Thermoset Materials	4
PL	735	Thermoset Processes	14
PL	738	Thermoset Design	8
CHEM	735	Chemistry	1
PHYS	735	Physics	1
ENG	741	Language & Communication	1
MATH	733	Mathematics	1
			30

PROGRAM: Operator - Thermoset (Machine Moulding) GBC CODE: EN748
LOCATION: Casa Loma Campus FEE: $135
LENGTH: 1 Semester
CERTIFICATION: Certificate
PREREQUISITE: Ontario Grade 10 with drafting

			Hours per week
PL	740	Thermoset Materials	4
PL	741	Thermoset Processes	14
PL	739	Thermoset Design	8
CHEM	735	Chemistry	1
PHYS	735	Physics	1
ENG	741	Language & Communication	1
MATH	733	Mathematics	1
			30

PROGRAM: Set-up Man - Thermoplastic (Machine Moulding) — GBC CODE: EN745 — FEE: $135
LOCATION: Casa Loma Campus
LENGTH: 1 Semester
CERTIFICATION: Certificate
PREREQUISITE: Ontario Grade 10 with drafting

			Hours per week
PL	730	Thermoplastic Materials	4
PL	733	Thermoplastic Processes	14
PL	736	Thermoplastic Design	8
CHEM	735	Chemistry	1
PHYS	735	Physics	1
ENG	741	Language & Communication	1
MATH	733	Mathematics	1
			30

PROGRAM: Operator - Thermoplastic (Forming & Fabricating) — GBC CODE: EN746 — FEE: $135
LOCATION: Casa Loma Campus
LENGTH: 1 Semester
CERTIFICATION: Certificate
PREREQUISITE: Ontario Grade 10 with drafting

			Hours per week
PL	731	Thermoplastic Materials	4
PL	734	Thermoplastic Processes	14
PL	737	Thermoplastic Design	8
CHEM	735	Chemistry	1
PHYS	735	Physics	1
ENG	741	Language & Communication	1
MATH	733	Mathematics	1
			30

PROGRAM: Orthotic-Prosthetic Techniques — GBC CODE: EN110
LOCATION: Casa Loma Campus — FEE: $260 per year
LENGTH: 2 Years (3rd year optional)
CERTIFICATION: Diploma
PREREQUISITE: Ontario Secondary School Graduation Diploma of the 4 or 5 year program with chemistry, physics and preferably some shop experience, or equivalent.

The graduate of the two year orthotic-prosthetic techniques program will have a background in materials, fabrication, machine shop and plastics, as well as anatomy, physiology, pathology, related to artificial limbs and braces.

FIRST YEAR	Semester I	Hours per Week
MED100	Introductory Anatomy & Biomechanics	4
PROS101	Materials & Shop Techniques	7
PL125	Plastics	2
MACH126	Machine Shop	4
ENDR113	Technical Drawing	4
MECH104	Mechanics	3
MET100	Metallurgy	2
MATH104	Mathematics	2
ENG100	Language & Communication	2
WELD147	Welding	2

FIRST YEAR	Semester II	Hours per Week
MED100	Introductory Anatomy & Biomechanics	4
PROS101	Materials & Shop Techniques	7
PL125	Plastics	2
MACH126	Machine Shop	4
ENDR113	Technical Drawing	4
MECH104	Mechanics	3
MET100	Metallurgy	2
MATH104	Mathematics	2
ENG100	Language & Communication	2
WELD147	Welding	2

SECOND YEAR	Semester III	
MED200	Intermediate Anatomy	2
MED201	Introductory Physiology	2
MED202	Introductory Pathology	1
PSY202	Psychology	2
PROS200	Orthotic & Prosthetic Techniques	13
MECH114	Mechanics of Materials	2
PROS203	Field Practice	6
EC113	Business Organization	1

SECOND YEAR	Semester IV	
MED200	Intermediate Anatomy	2
MED201	Introductory Physiology	2
MED202	Introductory Pathology	1
PROS200	Orthotic & Prosthetic Techniques	13
MECH114	Mechanics of Materials	2
PROS203	Field Practice	6
EC113	Business Organization	1

The graduate of the third year program will have a background of anatomy, biomechanics, physiology, psychology, pathology, rehabilitation, cast-taking techniques and prescription formulating. A further two years internship will be required, working in the field under the direction of a certified prosthetist and/or orthotist which will allow eligibility to write certification examinations.

PROGRAM: Orthotic-Prosthetic Techniques (Continued)

THIRD YEAR	Semester V	Hours per Week
MED300	Advanced Anatomy & Kinesiology	2
MED301	Physiology	1
MED302	Pathology	1
PROS300	Advanced Orthotic & Prosthetic Techniques	12
PROS301	Physical & Occupational Therapy	2
PROS302	Research Project	6
PROS303	Field Practice	6
PSY203	Rehabilitation	2

THIRD YEAR	Semester VI	Hours per Week
MED300	Advanced Anatomy & Kinesiology	2
MED301	Physiology	1
MED302	Pathology	1
PROS300	Advanced Orthotic & Prosthetic Techniques	12
PROS302	Research Project	6
PROS303	Field Practice	6
INST110	Instrumentation	2

PROGRAM: Plastics Technician A
GBC CODE: EN102
LOCATION: Casa Loma Campus
LENGTH: 2 years
FEE: $260 per year
CERTIFICATION: Diploma
PREREQUISITE: O.S.S.G.D. or equivalent

In Canada the growth rate of the plastics industry is more than double the industrial average. Over 1,100 companies are engaged in plastics; more than 600 of these firms are in Ontario. This rapid expansion has created a strong demand for trained people in manufacturing, sales, quality control, research and development.

FIRST YEAR	Semester I & II	Hours per week
PL100	Thermoplastic Materials	3
PL103	Thermoset Materials	2
PL110	Thermoplastic Processes	4
PL113	Thermoset Processes	3
PL120	Thermoplastic Design	1
PL123	Thermoset Design	1
ENDR105	Technical Drawing	3
CHEM110	Chemistry	3
PHYS110	Physics	2
ENG100	Language & Communication	2
MATH100	Mathematics	5
EC112	Business Organization	1
		30
MATH120	Applied Computer Programming	2

NOTE: In Semester II, Math 100 would be for 3 hours and Math 120 (Computer Programming) for 2 hours per week.

SECOND YEAR	Semester III & IV	
PL200	Thermoplastic Materials	3
PL203	Thermoset Materials	2
PL210	Thermoplastic Processes	4
PL211	Thermoset Processes	3
PL220	Thermoplastic Design	3
PL223	Thermoset Design	2
CHEM210	Chemistry	4
PHYS210	Physics	2
ENG200	Language & Communication	2
MATH201	Mathematics	4
EC212	Business Organization	1
		30

PROGRAM: Plastics Technician B - Thermosets
LOCATION: Casa Loma Campus
LENGTH: 1 Year
CERTIFICATION: Certificate
PREREQUISITE: Ontario Secondary School Graduation Diploma or equivalent.
GBC CODE: EN149
FEE: $260

In Canada the growth rate of the plastics industry is more than double the industrial average. Over 1100 companies are engaged in plastics; more than 600 of these firms are in Ontario. This rapid expansion has created a strong demand for trained people in manufacturing, sales, quality control, research and development.

Semester I & Semester II			Hours per week
PL	103	Thermoset Materials	5
PL	203	Thermoset Materials	
PL	113	Thermoset Processes	8
PL	211	Thermoset Processes	
PL	123	Thermoset Design	1
PL	223	Thermoset Design	
ENDR	105	Technical Drawing	3
CHEM	110	Chemistry	3
PHYS	110	Physics	2
ENG	100	Language & Communication	3
MATH	100	Mathematics	5
EC	112	Business Organization	1
			31

In Semester II, Math would be for 3 hours Math 120 (Computer Programming) for 2 hours per week.

PROGRAM: Plastics Technician B - Thermoplastics
LOCATION: Casa Loma Campus
LENGTH: 1 Year
CERTIFICATION: Certificate
PREREQUISITE: Ontario Secondary School Graduation Diploma or equivalent.
GBC CODE: EN150
FEE: $260

Semester I & Semester II			Hours per week
PL	100	Thermoplastic Materials	5
PL	200	Thermoplastic Materials	
PL	110	Thermoplastic Processes	7
PL	210	Thermoplastic Processes	
PL	120	Thermoplastic Design	5
PL	220	Thermoplastic Design	
CHEM	110	Chemistry	3
PHYS	110	Physics	2
ENG	100	Language & Communication	3
MATH	100	Mathematics	5
EC	112	Business Organization	1
			31

In Semester II, Math would be for 3 hours Math 120 (Computer Programming) for 2 hours per week.

PROGRAM: Plastics Technician C
LOCATION: Casa Loma Campus
LENGTH: 2 Years
CERTIFICATION: Diploma
PREREQUISITE: Ontario Secondary School Diploma or equivalent.
GBC CODE: EN115
FEE: $260 per year

In Canada the growth rate of the plastics industry is more than double the industrial average. Over 1100 companies are engaged in plastics; more than 600 of these firms are in Ontario. This rapied expansion has created a strong demand for trained people in manufacturing, sales, quality control, research and development.

FIRST YEAR	Semester I		Hours per Week
PL	101	Thermosplastic Materials	3
PL	104	Thermoset Materials	2
PL	111	Thermoplastic Techniques	5
PL	114	Thermoset Techniques	4
ENDR	105	Technical Drawing	3
CHEM	110	Chemistry	3
PHYS	110	Physics	2
ENG	110	Language & Communication	2
MATH	100	Mathematics	5
EC	112	Business Organization	1
			30

In Semester II, Math 100 would be for 3 hours and Math 120 (Computer Programming) for 2 hours per week.

FIRST YEAR — Semester II - select Either Group A or Group B

GROUP A - THERMOPLASTICS			Hours per Week
PL	102	Thermoplastic Materials	6
PL	112	Thermoplastic Techniques	8
ENDR	100	Technical Drawing	3
CHEM	110	Chemistry	4
PHYS	110	Physics	2
ENG	110	Language & Communication	2
MATH	110	Mathematics	4
EC	112	Business Organization	1
			30

GROUP B - THERMOSETS			
PL	105	Thermoset Materials	6
PL	115	Thermoset Techniques	9
ENDR	100	Technical Drawing	3
CHEM	110	Chemistry	4
PHYS	110	Physics	2
ENG	110	Language & Communication	2
MATH	100	Mathematics	4
EC	112	Business Organization	1
			30

PROGRAM: Plastics Technician C (Continued)

SECOND YEAR - Select either Group A or Group B, depending upon first year choice.

Semester III

GROUP A - THERMOPLASTICS

			Hours per week
PL	201	Thermoplastic Materials	6
PL	213	Thermoplastic Techniques	10
CHEM	210	Chemistry	4
PHYS	210	Physics	2
ENG	200	Language & Communication	3
MATH	201	Mathematics	4
EC	212	Business Organization	1
			30

GROUP B - THERMOSETS

PL	204	Thermoset Materials	6
PL	212	Thermoset Techniques	10
CHEM	210	Chemistry	4
PHYS	210	Physics	2
ENG	200	Language & Communication	3
MATH	201	Mathematics	4
EC	212	Business Organization	1
			30

Semester IV

GROUP A - THERMOPLASTICS

PL	201	Thermoplastic Materials	3
PL	213	Thermoplastic Techniques	5
CHEM	210	Chemistry	4
PHYS	210	Physics	2
ENG	200	Language & Communication	3
MATH	201	Mathematics	4
EC	212	Business Organization	1
		Elective	8
			30

GROUP B - THERMOSETS

PL	204	Thermoset Materials	3
PL	212	Thermoset Techniques	5
CHEM	210	Chemistry	4
PHYS	210	Physics	2
ENG	200	Language & Communication	3
MATH	201	Mathematics	4
EC	212	Business Organization	1
		Elective	8
			30

PROGRAM: Precision Instrument Techniques
LOCATION: Casa Loma Campus
Kensington Campus
LENGTH: 2 Years
CERTIFICATION: Diploma
PREREQUISITE: Ontario Secondary School Graduation or equivalent; mathematics and science options would be assets.

GBC CODE: EN112
FEE: $260 per year

Employment opportunities are many and varied. Numerous industries require personnel possessing a high degree of manual skills integrated with a sound electronics background; such industries include instrument departments, control systems and guidance manufacturers, geophysical services, paramedical services, environmental and meteorological departments, aircraft systems maintenance, etc.

Semester I

		Hours per week
INST103	A.C. - D.C. Theory Lab	8
INST102	Piping & Instrument Lab Techniques	4
INST108	Instrumentation Fundamentals	6
MATH100	Mathematics	4
ENDR105	Technical Drawing	4
ENGL00	Language & Communication	2
MECH102	Machine & Dynamics	4
		32

Semester II

		Hours per week
INST100	Measuring Principles	7
INST101	Electronic Instrumentation	7
INST106	Electronics Theory & Lab	6
MATH100	Mathematics	4
ENGL00	Lang. & Communication	2
PHYS100	Applied Physics	4
		30

Semester III

INST209	Control Theory & Application	6
MET100	Metallurgy	3
PIT100	Horological Techniques	7
ENG200	Language & Communication	2
MATH200	Mathematics	4
CHEM100	Chemistry	2
INST204	Applied Solid State Electronics	6
		30

Semester IV

INST202	Analytical & Environmental Instrumentation	6
INST203	Computer Control Principles I	7
INST204	Applied Solid State Electronics	6
MATH200	Mathematics	4
ENG200	Lang. & Communication	2
CHEM100	Chemistry	2
MET200	Metallurgy	3
		30

PROGRAM: Process Piping Design GBC CODE: EN106
LOCATION: Casa Loma Campus FEE: $260 per year
LENGTH: 2 Years
CERTIFICATION: Diploma
PREREQUISITE: Ontario Secondary School Graduation Diploma of a 4-or 5-year program, or equivalent. Drafting and shop options would be an asset.

Employment opportunities: Pipes are the arteries and veins of any modern, industrial community. Fluids and semi-solids, essential to our existence as a highly industrialized society, are carried by pipes during their production, processing, transportation and utilization. Developments in atomic energy, rocket propulsion, petro-chemicals, food and drug production, cryogenics and pollution control, are creating demands for more sophisticated piping techniques. This challenge will require the services of highly skilled technicians and draftsmen.

The program is designed to prepare graduates for employment as technicians, draftsmen and estimators by consulting and design engineers, public utilities and manufacturing industries.

FIRST YEAR	Semester I	Hours per week
ENDR 118	Descriptive Geometry	3
ENDR 158	Drafting & Design	12
MATH 100	Mathematics	4
ENG 100	Language & Communication	2
MECH 100	Mechanics	3
MET 100	Metallurgy	2
MACH 110	Workshop Technology	4
		30

FIRST YEAR	Semester II	
ENDR 118	Descriptive Geometry	3
ENDR 104	Pipe Drafting & Design	10
MATH 100	Mathematics	4
ENG 100	Language & Communication	2
MECH 100	Mechanics	3
MET 100	Metallurgy	2
ENDR 115	Structural Drafting	3
MACH 110	Workshop Technology	4
		31

SECOND YEAR	Semesters III & IV	
ENDR 204	Design & Layout of Piping Systems	10
ENDR 222	Descriptive Geometry	4
ENDR 225	Materials & Processes	2
MECH 115	Mechanics of Fluids	2
INST 106	Indust. Process Instrumentation	3
CHEM 100	Chemistry	3
MATH 200	Mathematics	4
ENG 200	Language & Communication	2
		30

PROGRAM: Tool and Die Design GBC CODE: EN103
LOCATION: Casa Loma Campus
LENGTH: 2 years FEE: $260 per year
CERTIFICATION: Diploma
PREREQUISITE: O.S.S.G.D. of a 4- or 5-year program, or equivalent. Drafting and shop options would be an asset.

The aim of the Tool and Die Design program is to develop the necessary theoretical and practical skills. The student studies and practices current design techniques. Through consideration of the factors which affect the efficiency of designed tools, he is encouraged to be imaginative, individualistic and critically analytical in seeking possible solutions to design and production problems. The student is taught the operating procedures and capacities of a variety of production and specialized machine tools. He studies Mathematics, Metallurgy, Metrology, Mechanics of Materials, so that his designs may be functional. In the course of his daily work routine the designer is involved in liaison work between many company departments so that the study of language and communication is extremely important.

For the enterprising graduate, prospects of advancement exist in production, manufacturing, industrial engineering, design, and technical sales.

FIRST YEAR	Semester I	Hours per week
ENDR118	Descriptive Geometry	3
ENDR158	Drafting & Design	12
MATH100	Mathematics	5
ENG100	Language & Communication	2
MECH100	Mechanics	3
MET100	Metallurgy	2
MACH110	Workshop Technology	4
		31

	Semester II	
ENDR118	Descriptive Geometry	3
ENDR130 to 133	Jig & Fixture	12
MATH100	Mathematics	3
MECH100	Mechanics	3
ENG100	Language & Communication	2
TD100	Metrology	2
MACH110	Workshop Technology	4
MATH120	Applied Computer Programming	2
		31

SECOND YEAR	Semester III	
ENDR140 & 240	Die Design	12
MACH207	Diemaking	4
MET100	Metallurgy	2
MATH200	Mathematics	4
MECH110	Mechanics of Materials	2
ENG200	Language & Communication	2
ENDR222	Descriptive Geometry	3
ENDR202	Manufacturing Processes	2
		31

PROGRAM: Tool and Die Design (Continued)

SECOND YEAR	Semester IV	Hours per week
ENDR340	Die Design	12
ENDR241	Tool Design Theory	2
MACH207	Diemaking	4
TD110	Metrology	2
WELD148	Welding	3
MATH200	Mathematics	4
MECH110	Mechanics of Materials	2
ENG200	Language & Communication	2
ENDR222	Descriptive Geometry	3
		34

PROGRAM: Toolmaking Technician
LOCATION: Casa Loma Campus
LENGTH: 2 Years
CERTIFICATION: Diploma
PREREQUISITE: Ontario Secondary School Graduation Diploma or equivalent

GBC CODE: EN104
FEE: $260 per year

On the toolmaking technician program, the student can obtain the theoretical knowledge and operating skills necessary to enable him to enter toolmaking or related industries at an appropriate level.

Instruction is provided on standard machine tools and in modern techniques such as numerical control and electrical discharge machining. Related courses are offered to complement instruction in the major area. The graduate can look forward to a vital and interesting career in the modern production process, a career which demands skill, application, accuracy and cost-consciousness.

FIRST YEAR	Semesters I & II	Hours per week
ENDR 134	Tool Design (Jig & Fixtures)	4
MACH 120	Toolmaking	12
NC 126	Numerical Control	2
MACH 127	Hydraulics & Pneumatics	2
PM 110	Precision Measurement	1
MET 100	Metallurgy	1
MATH 100	Mathematics	5
MECH 100	Mechanics	3
ENG 100	Language and Communication	2
MATH 120	Applied Computer Programming	2

NOTE: In Semester II MATH 100 will be for 3 hours and MATH 120 (Applied Computer Programming) for 2 hours per week.

SECOND YEAR	Semesters III & IV	
ENDR 242	Die Design	4
MACH 204	Diemaking	10
NC 208	Numerical Control	2
MET 100	Metallurgy	1
PM 110	Precision Measurement	1
MATH 200	Mathematics	4
MECH 110	Mechanics of Materials	2
EL 305	Machine Circuits & Apparatus	2
PL 125	Plastic Fundamentals	2
ED 100	Fundamentals of Supervision & Instructional Techniques	2

PROGRAM: Watchmaking
LOCATION: Casa Loma Campus
LENGTH: 2 Years (with optional 3rd year)
CERTIFICATION: Diploma
PREREQUISITE: Ontario Secondary School Graduation Diploma or equivalent

GBC CODE: EN111
FEE: $260 per year

1. Graduates of the two year program are qualified for employment in jewellery stores as watch repairers or in precision industries as craftsmen.

2. Graduates of the three year program are qualified to service all types of complicated watches and all electric and electronic watches presently on the market except quartz crystal oscillators.

FIRST YEAR Semester I		Hours per Week
WACH130	Theory of Watchmaking	6
WACH131	Watchmaking Skills	18
SBM132	Small Business Management	2
ENG132	Language & Business Correspondence	2
MET130	Metallurgy I	2

FIRST YEAR Semester II		Hours per Week
WACH132	Theory of Watchmaking	6
WACH133	Watchmaking Skills	18
SBM132	Small Business Management	2
ENG132	Language & Business Correspondence	2
MET130	Metallurgy I	2

SECOND YEAR Semester III		
WACH232	Theory of Watchmaking	6
WACH231	Watchmaking Skills	18
EC100	Economics	1
ENDR105	Drafting	3
ENG200	Language & Communication	2

SECOND YEAR Semester IV		
WACH232	Theory of Watchmaking	6
WACH233	Watchmaking Skills	18
EC100	Economics	1
ENDR105	Drafting	3
ENG200	Lang. & Communication	2

THRID YEAR Semester V		
WACH300	Theory of Watchmaking	5
WACH331	Watchmaking Skills	19
MATH136	Mathematics	2
ELTC115	Electronics	4

THIRD YEAR Semester VI		
WACH332	Theory of Watchmaking	5
WACH333	Watchmaking Skills	19
MATH136	Mathematics	2
ELTC115	Electronics	4

PROGRAM: Welder Fitter
LOCATION: Kensington Campus
LENGTH: 1 Year
CERTIFICATION: Certificate
PREREQUISITE: Ontario Grade 10 or equivalent

GBC CODE: EN551
FEE: $5 per week

Graduates of this program are well prepared to advance beyond the operator level to positions of responsibility in the welding industry. Welding supervision, inspection, sales, and manufacturers representatives are examples of positions now held by previously successful graduates.

Students graduating from this program will be considered for the welding specialist program, which is designed to prepare graduates to proceed toward positions in the welding industry at the technician level.

Semesters I & II

WELD	540	Oxy-acetylene Welding, Brazing & Cutting-Theory & Practice
WELD	541	Electric Arc Welding-Theory & Practice
WELD	542	Fabrication-Theory & Practice
WELD	543	Gas Tungsten Arc Welding-Theory & Practice
WELD	544	Semi-Automatic Welding-Theory & Practice
ENDR	571	Plate & Structural Layout
ENDR	572	Bluepring Reading
MATH	536	Mathematics
ENG	530	Language & Communication

PROGRAM: Welder Fitter Refresher
LOCATION: Kensington Campus
LENGTH: 1 Semester (20 Weeks)
CERTIFICATION: Certificate
PREREQUISITE: Basic knowledge of welding theory; manipulative skills necessary for reasonably good quality workmanship in the flat and horizontal positions, using electric arc and oxy-acetylene processes; a pre-induction theory and practical test is required.

GBC CODE: EN554
FEE: $5 per week

This program is designed to build upon and improve already acquired welding skills to levels necessary to pass an all-position welding test of the standard required by the Boiler Inspection Branch of the Ministry of Consumer and Commercial Relations. Graduates may expect to find employment at the mechanic's level in any one of the wide variety of industrial welding positions or related occupations.

WELD	540	Oxy-Acetylene Welding, Brazing Cutting-Theory & Practice
WELD	541	Electric Arc Welding-Theory & Practice
WELD	542	Fabrication-Theory & Practice
WELD	543	Gas Tungsten Arc Welding-Theory & Practice
ENDR	571	Plate & Structural Layout
ENDR	572	Bluepring Reading
MATH	536	Mathematics (Module I)

PROGRAM: Welding Operator
LOCATION: Kensington Campus
LENGTH: 1 Semester
CERTIFICATION: Certificate
PREREQUISITE: Ontario Grade 8 minimum or equivalent
GBC CODE: EN552
FEE: $5 per week

This program provides an excellent opportunity for any man between the ages 16 and 50 to learn a useful skill in a relatively short period of time and to work toward the mechanic's level in a well-paying trade. Evening courses in special welding techniques are readily available for the ambitious person wishing to prepare for advancement.

WELD530	Oxy-acetylene Welding, Brazing & Cutting-Theory & Practice
WELD531	Electric Arc Welding-Theory & Practice
ENDR573	Blueprint Reading
ENG541	Language & Communication

PROGRAM: Welding Specialist
LOCATION: Kensington Campus
LENGTH: 1 year
CERTIFICATION: Certificate
PREREQUISITE: Ontario Secondary School Graduation Diploma or equivalent education and
(a) Specialization in welding in a secondary school or
(b) Successful completion of a welder fitter program in a College of Applied Arts and Technology or
(c) Approved industrial experience

Pre-entry training or upgrading can be arranged for candidates who do not possess the stated prerequisites.

GBC CODE: EN153
FEE: $260 per year

The welding specialist has a sound background knowledge of manual, semi-automatic, and automatic welding processes and equipment, weld inspection, quality control and metallurgical principles, and production procedures.

With the continued development of increasingly sophisticated welding equipment, many new and interesting occupations are available in the welding industry. A successful graduate of the welding specialist program may expect to advance toward positions in manufacturing industries, sales, technical service, weld testing and inspection, quality control, and design at the technician level.

Semesters I & II		Hours per week
WELD100	Manual Welding Processes Gas & Arc	5
WELD101	Gas Tungsten Arc Welding	2
WELD102	Semi-automatic & Automatic Welding Processes	3
WELD103	Industrial Welding Applications & Shop Procedures	5
MET100	Metallurgy	2
MATH100	Mathematics	4
ENG100	Language & Communication	2
EL200	Electrical Fundamentals	2
ENDR118	Descriptive Geometry	2
ENDR119	Technical Drawing	3

PROGRAM: Apparel Design & Pattern Drafting
LOCATION: Kensington Campus
LENGTH: 32 Weeks
CERTIFICATION: Certificate
PREREQUISITE: AS541 or equivalent; interview; eight-week appraisal and evaluation.
GBC CODE: FT540
FEE: $5 per week

This program is designed to train graduates for entry into the following branches of the fashion industry: women's apparel industries; boutique shops; styling; fashion illustration; sample making; designing (commercial, custom and costume); children's wear, etc.

This is a practical program to develop a student's competence in creative design covering such areas as foundation blocks to manufactured sizes; styling; analyzing existing styles; form; colour; textures; research; grading sizes; making samples; cutting; marking; sketching; etc. Techniques used are "on the flat"

Semester I		Hours per week	Credit Units per Semester:
PAT 541	Apparel Pattern Drafting	12	7.0
PAT 542	Design, Colour, Texture, Grading Rules	3	2.0
PAT 544	Fashion Illustration	3	2.0
DRES 541	Apparel Construction, Samples, Finishes	7	5.0
SEW 541	Power Sewing Machines & Irons	2	1.0
ENG 551	Vocabulary of Fashion	3	3.0
		30	20.0

Semester II			
PAT 551	Apparel Pattern Drafting (Advanced)	10	6.0
PAT 552	Pattern Grading, Fashion Research, Copies, Styling, Textiles	4	3.0
PAT 553	Design, Colour, Texture, Draping (Adv.)	4	3.0
PAT 554	Fashion Illustration (Sec. 2)	3	3.0
DRES 551	Apparel Construction, Samples, Finishes (Sec. 2)	5	3.0
SEW 551	Power Sewing & Irons	2	1.0
ENG 561	Vocabulary of Fashion (Sec. 2)	2	2.0
		30	21.0

Available full-time or part-time.
Several projects for display or fashion shows are required.
Various reference books and periodicals are used relating to fabrics, leather, fur, patterns, etc. Students will also develop their own style book.

PROGRAM: Apparel Technology GBC CODE: FT103
LOCATION: Kensington Campus FEE: $260 per year
LENGTH: 2 Years (3rd Year Optional)
CERTIFICATION: Diploma
PREREQUISITE: Ontario Secondary School Graduation Diploma or equivalent with mathematics; spatial conception; digital and dexterity tests; instructor's evaluation.

This is basically a management program; it is designed to train students to fill current employment opportunities as plant managers and production supervisors, primarily in Ontario, but also in the Canadian apparel industry. Candidates who successfully complete the 2-year program are awarded a diploma as an apparel technician, while the successful completion of the 3-year program carries with it the diploma of the apparel technologist (management).

FIRST YEAR		Semester I (13 weeks plus 13 weeks plant project)	HOURS PER WEEK	CREDIT UNITS
AT	100	Work Management I	3	2.5
AT	121	Industrial Organization I	2	2.0
PAT	140	Apparel Drafting I	3	2.0
AT	151	Apparel Machine Technology: Seaming	4	2.5
FAB	150	Textiles, Fabrics, Trims I: Characteristics	2	2.0
AT	181	Computer Mathematics	5	4.0
AT	171	Apparel Production Management I	5	5.0
AT	161	Operator Training	2	1.0
ENG	151	Language of Fashion: Communication	2	2.0
EC	175	Economics of Canadian Apparel Industry	2	2.0
			30	25.0

FIRST YEAR		Semester II (13 weeks plus 13 weeks plant project)		
AT	101	Work Management II	3	2.5
AT	122	Industrial Organization II	2	2.0
PAT	141	Apparel Pattern Drafting II	4.5	3.0
AT	152	Apparel Machine Technology II	4.5	3.5
FAB	251	Textiles II: Knits, Dyes, Processing	2	2.0
AT	182	Computer Mathematics, Programming	5	4.0
AT	172	Apparel Production Management II	4	4.0
SEW	161	Operator Training: Incentives (SEW 155 incl.)	2	1.0
ENG	161	Language of Fashion	2	2.0
EC	176	Government Programs	1	1.0
			30	25.0

(Paper on industrial experience due in March)

PROGRAM: Apparel Technology (Continued)

SECOND YEAR		Semester III (13 weeks plus 13 weeks plant project)	HOURS PER WEEK	CREDIT UNITS
AT	200	Work Management III	3	2.5
PAT	241	Apparel Pattern Analysis III: Construction	4	3.0
AT	251	Apparel Machine Technology III: Cutting, etc.	4	2.5
FAB	250	Textiles III: Behaviour, Molding	4	3.0
AT	281	E.D.P. Systems, Computers	4	3.0
AT	271	Apparel Production Management III	4	4.0
AT	260	Apparel Plant Supplies: Characteristics	2	1.0
ENG	251	English in the Fashion World: Reports	2	2.0
BUS	332	Managerial Accounting: Principles, Budgets	3	3.0
			30	24.0

SECOND YEAR		Semester IV (13 weeks plus 13 weeks plant project)		
AT	201	Work Management IV	3	2.5
PAT	242	Apparel Pattern Grading IV: Markers	3	2.0
AT	252	Apparel Construction: Steps	3	1.5
FAB	261	Textiles IV: Testing, etc.	3	3.0
AT	281	Computers: Apparel Applications	5	4.0
AT	272	Apparel Production Management IV: M.B.O.	4	4.0
SEW	252	Sewing: Special Machines	2	1.0
PAT	253	Apparel Product Design	3	2.0
ENG	252	English in the Fashion World: Media	2	2.0
BUS	332	Managerial Accounting: Finance	2	2.0
			30	24.0

(Paper on industrial experience due in March)

The prerequisite for admission to the 3rd year is successful performance in the first 4 semesters, with at least 3.0 GPA or equivalent.

Only students showing special aptitudes, or with an industrial engineering background may be selected to go on for the apparel technologist diploma. A thesis based on the student's industrial experience is required by 15 April.

PROGRAM: Apparel Technology (Continued)

		HOURS PER WEEK	CREDIT UNITS
THIRD YEAR	Semester V (13 weeks plus 13 weeks of plant project)		
	Semester VI (16 weeks - March to 15 June)		

Advanced levels in:

AT	350	Automated Machinery--Numerical Control, etc.
AT	320	Large-Plant Problems
AT	370	Multi-Plant Problems
FAB	350	Fabrics
AT	372	Delivery Schedules
AT	381	Advanced Computer Uses--Plant, Office, etc.
ENG	351	English--Theses
		30 25.0

Optional content described as apparel management is also planned for the 3rd year.

Continuous contact with apparel manufacturers is required.

The program is endorsed by the Needle Trades Management Association and the Apparel Manufacturers' Association of Ontario.

In-plant training projects will be selected in discussion with the advisory committee.

PROGRAM: Creative Fashions (Apparel) GBC CODE: FT101
LOCATION: Kensington Campus FEE: $260 per year
LENGTH: 2 Years (3rd Year Optional)
CERTIFICATION: Diploma
PREREQUISITE: Ontario Secondary School Graduation Diploma or equivalent and instructor's evaluation; sewing training and aptitude

The program is designed to develop the creativity of the student in fashion disciplines culminating in original styles, patterns, and finished garments for the women's apparel and fur industries; the student may specialize in the second year in one of five options: apparel section supervision, couture workroom supervision, apparel design, furriery, or apparel buying. These options are designed to train students in such skills as draping and pattern design; fur recognition and manufacturing techniques; care, maintenance and marketing of wild and ranched furs; business management; merchandising; production machines; couture sewing; workroom supervision; and language of fashion.

FIRST YEAR	Semester I Common to all options	Hours per Week	Credit Units per Semester
SEW 145	Industrial Power Sewing, Work & MTM	2	1.0
FUR 146	Fur and Marketing of Fashion	1	1.0
PAT 141	Pattern Drafting	6	4.0
PAT 142	Styling, Research, Colour, Design	2	2.0
PAT 144	Fashion Illustration	3	2.0
DRES 141	Construction, Layout, Samples, etc.	6	4.0
DRES 142	Fabrics	2	2.0
DRES 146	Tailoring - Basic	4	3.0
ENG 151	Vocabulary of Fashion	2	2.0
FASH 100	Fashion Business Procedures	2	2.0
		30	23.0

FIRST YEAR	Semester II		
SEW 155	Industrial Power Sewing, Work & MTM	2	1.0
FUR 156	Fur and Marketing of Fashion	1	1.0
PAT 151	Pattern Drafting	6	4.0
PAT 152	Styling, Research, Colour, Design	2	2.0
PAT 154	Fashion Illustration - Advanced	3	2.0
DRES 151	Construction, Layout, Samples, etc.	6	4.0
DRES 152	Fabrics	2	2.0
DRES 156	Tailoring - Intermediate	4	3.0
ENG 161	Vocabulary of Fashion	2	2.0
FASH 101	Fashion Business Procedures	2	2.0
		30	23.0

Several projects for display or fashion shows are required. Various reference books and periodicals are used relating to fabrics, fur, leather, patterns, fashion, etc. Students will also develop their own style book.

PROGRAM: Creative Fashions (Apparel) Continued

OPTION I Apparel Section Supervisor

PREREQUISITE: Satisfactory standing in first year or equivalent work experience; honour standing in industrial power sewing; make-up in FUR 543/545, PAT 141/151 & DRES 141/151 or equivalent.

SECOND YEAR		Semester III	Hours per Week	Credit Units per Semester
SEW	245	Sewing Machines, Time Studies	6	4.5
SEW	244	Special Machines, Cutting, Ironing	5	3.5
SEW	241	Apparel Plant Supplies, Types	5	3.5
AT	171	Apparel Production--Human Relations	5	5.0
AT	161	Operator Training & Cutters	3	2.5
ENG	251	Language of Fashion (History)	3	3.0
FASH	201	Fashion Business Procedures (Corporate Structure, etc)	3	3.0
			30	25.0

SECOND YEAR		Semester IV		
SEW	242	Machines (Special Operations, Attachments)	6	4.5
AT	172	Apparel Production: Labour Management Relations	4	4.0
AT	162	Operator Training--Incentives	3	2.0
FAB	151	Fabric, Thread Characteristics (Stitches)	3	2.0
AT	151	Apparel Machine Technology	4	2.5
PAT	242	Markers, Layout	3	2.0
ENG	261	Language of Fashion (Shows etc.)	3	3.0
FASH	211	Fashion Business Procedures (Sec. 2) (Inventory--Costing, etc.)	4	4.0
			30	24.0

On-the-job training days are scheduled for each student, weekly where possible.

PROGRAM: Creative Fashions (Apparel) Continued

OPTION II Couture Workroom Supervisor

PREREQUISITE: Satisfactory standing in first year or equivalent work experience; honour standing in custom dressmaking & alterations, with make-up in FUR 543/545 PAT 141/151 & PAT 142 or equivalent.

SECOND YEAR		Semester III	Hours per Week	Credit Units per Semester
DRES	241	Couture Construction--Technology	7	5.0
DRES	242	Fabrics, Knits, Trims, Braids	4	3.0
DRES	244	Alterations, Fitting--Advanced	6	4.0
AT	171	Apparel Production--Human Relations	2	2.0
SEW	242	Machines, Special Operations	2	2.0
PAT	241	Pattern Drafting--Changes	2	2.0
DRES	248	Buying--Materials, Supplies	2	2.0
ENG	251	English of the Fashion World--Fashion Shows; Media	2	2.0
FASH	201	Fashion Business Procedures--Advanced (Costing, etc.)	3	3.0
			30	25.0

SECOND YEAR		Semester IV		
DRES	251	Couture Construction--Technology	7	5.0
DRES	252	Fabrics, Knits, Trims, Braids	4	3.0
DRES	254	Alterations, Fitting--Advanced	6	4.0
AT	172	Apparel Production--Human Relations	2	2.0
SEW	252	Machines, Special Operations	2	2.0
PAT	251	Pattern Drafting--Changes	2	2.0
DRES	258	Buying--Materials, Supplies	2	2.0
ENG	261	English of the Fashion World--Fashion Shows; Media	2	2.0
FASH	211	Fashion Business Procedures--Advanced (Costing, etc.)	3	3.0
			30	25.0

Periodic on-the-job training required during the year, weekly where possible.

PROGRAM: Creative Fashions (Apparel) Continued

OPTION III Apparel Design

PREREQUISITE: Satisfactory standing in first year or equivalent work experience; honour standing in apparel design and pattern drafting, with make-up in FUR 543/545, DRES 142/152, FASH 100/101 or equivalent.

SECOND YEAR	Semester III	Hours per Week	Credit Units per Semester
SEW 245	Sewing Machines, Time Studies	3	2.0
DRES 261	Apparel Construction--Technology (Advanced)	5	3.5
DRES 246	Tailoring, Special Finishes	4	3.0
PAT 251	Pattern Drafting, Grading	5	3.5
PAT 252	Draping and Design	3	3.0
PAT 244	Fashion Illustration--Media	3	2.0
JWL 260	Introduction to Jewellery	3	2.0
ENG 251	Language of the Fashion World (History)	2	2.0
FASH 201	Fashion Business Procedures-- Advanced (Fashion Shows), Costing	2	2.0
		30	23.0

SECOND YEAR	Semester IV		
SEW 244	Special Machines, Cutting, Ironing (Condensed)	2	1.0
PAT 241	Pattern Drafting and Changes	5	3.5
PAT 262	Draping, Design	2	2.0
PAT 243	Fashion Research, Co-ordination	2	2.0
PAT 254	Fashion Illustration--Media	3	2.0
PAT 245	Theatre, T.V. Costume Design	2	2.0
DRES 256	Tailoring, Special Finishes (Advanced)	4	3.0
DRES 247	Apparel Construction--Samples	4	3.5
ENA 270	Enamelling-Accessories	3	2.0
ENG 261	Language of the Fashion World (Shows)	2	2.0
FASH 211	Fashion Business Procedures	1	1.0
		30	24.0

Periodic on-the-job experience or free-lance success required during the year.

PROGRAM: Creative Fashions (Apparel) Continued

OPTION IV Furriery

PREREQUISITE: Satisfactory standing in first year or equivalent work experience; honour standing in fur program FT 543, with make-up in PAT 141/151, SEW 541, DRES 141/151.

SECOND YEAR	Semester III	Hours per Week	Credit Units per Semester
FUR 243	Fur Recognition: Look-Alikes	4	3.0
FUR 244	Manufacturing Techniques--Advanced	6	4.0
FUR 245	Fur Design, Pattern Drafting	6	4.0
FUR 247	Fur Buying, Skins, Garments	2	2.0
SEW 245	Sewing Machines, Time Studies	3	2.0
DRES 241	Apparel Construction Technology	3	2.0
ENG 251	Language of the Fashion World-- Fashion Shows	3	3.0
FASH 201	Fashion Business Procedures--Advanced Costing--Inventory Control	3	3.0
		30	23.0

SECOND YEAR	Semester IV		
FUR 253	Fur Recognition: Look-Alikes	4	3.0
FUR 254	Manufacturing Techniques--Advanced	6	4.0
FUR 255	Fur Design, Pattern Drafting	6	4.0
FUR 257	Fur Buying, Skins, Garments	2	2.0
SEW 244	Sewing Machines, Time Studies	3	2.0
DRES 261	Apparel Construction Technology	3	2.0
ENG 261	Language of the Fashion World-- Fashion Shows	3	3.0
FASH 211	Fashion Business Procedures--Advanced Costing--Inventory Control	3	3.0
		30	23.0

Periodic on-the-job training required during the year, weekly where possible.

PROGRAM: Creative Fashions (Apparel) Continued

OPTION V Apparel Buying

PREREQUISITE: Satisfactory standing in first year or equivalent work experience; honour standing in apparel design and pattern drafting or fur program FT 543, with make-up in DRES 141/151, PAT 144/154, DRES 142/152, as applicable.

SECOND YEAR	Semester III	Hours per week	Credit Units
FUR247	Fur Buying, Skins, Garments, Maths	2	2.0
DRES249	Workroom Problems & Management; Costing	5	4.0
AT171	Apparel Production II--Human Relations	2	2.0
DRES241	Apparel Construction--Technology	7	5.0
PAT244	Fashion Illustration	3	3.0
FAB150	Fabric Characteristics	3	2.0
MARK100	Marketing--Buying	5	5.0
ENG251	English of the Fashion World--Fashion Shows	3	3.0
		30	26.0

SECOND YEAR	Semester IV		
AT172	Apparel Production IV	5	5.0
DRES256	Tailoring, Special Finishes	5	4.0
DRES248	Buying--Materials, Supplies	5	4.0
MARK202	Merchandising, Pricing	5	5.0
ENG261	English of the Fashion World	3	3.0
EDP175	E D.P.--Point of Sale Machines	5	5.0
FASH201	Fashion Business Procedures, Maths, Costing	2	2.0
		30	28.0

Periodic on-the-job training is required during the year.

OPTIONAL THIRD YEAR Apparel Management Trainee

PREREQUISITE: Minimum of 3.0 GPA in 2-year program or equivalent in work experience.

EDP251	Data Processing Systems	5	4.0
MARK205	Marketing Management (Sem. I)	5)	4.0)
MARK206	or " " (Sem.II)	5)	4.0)
ACC202	Cost Accounting I (Sem. I)	(5	(4.0
ACC204	or " " II (Sem.II)	(5	(4.0
AT371	Personnel Problems--Hiring	3	3.0
PAT341	Designing & Drafting (Advanced Style Projection)	5	4.0
DRES341	Apparel Projection--Techniques	5	4.0
ENG351/361	Language of the Fashion World--Reports, Communication--Media	2	2.0
		30	25.0

Periodic on-the-job training required during the year, weekly where possible.

PROGRAM: Custom Dressmaking & Alterations
LOCATION: Kensington Campus
LENGTH: 28 Weeks (2 Semesters)
CERTIFICATION: Certificate
PREREQUISITE: AS541 or equivalent; six weeks appraisal and evaluation.

GBC CODE: FT541
FEE: $5 per week

This is a practical program designed for those wishing to find employment in the following branches of the women's fashion industry: custom dressmaking; fitting; workroom in stores and boutiques; altering; finishing; sample making; selling (textiles, patterns, trims, apparel stores, costume rentals); tailoring (women's).

Fundamental skills of domestic and industrial professional sewing by hand and machine are taught for a wide range of contemporary fabrics.

SEMESTER I		Hours per Week	Credit Units per Semester
DRES 546	Tailoring - Basic	7	4.0
DRES 541	Construction, layout, cutting, samples, finishes, sewing techniques	12	8.0
DRES 542	Textiles, fabrics, knits, trims, braids, etc.	2	1.5
DRES 544	Fitting, alterations, care of garments	4	2.0
DRES 545	Patterns, fashions, Intimate Wear	1	1.0
SEW 541	Machines, Domestic & Power Sewing & Ironing Machines	1	.5
FASH 500	Fashion Business Routines	1	1.0
ENG 551	Vocabulary of Fashion	2	2.0
		30	20.0

SEMESTER II			
DRES 556	Tailoring - Intermediate	7	4.0
DRES 551	Construction, layout, cutting, samples, finishes, sewing techniques (advanced)	12	8.0
DRES 552	Textiles, fabrics, knits, trims, braids, etc. (Sec. 2)	2	1.5
DRES 554	Fitting, alterations, etc. (Sec. 2)	4	2.0
DRES 555	Patterns, fashions, etc. (Sec. 2)	1	1.0
SEW 551	Machines, (cont'd)	1	.5
FASH 501	Fashion Business Procedures	1	1.0
ENG 561	Vocabulary of Fashion (Sec. 2)	2	2.0
		30	20.0

Various reference books, and periodicals are used relating to fabrics, suedes, furs, patterns, styling, etc.

Available full-time or part-time.

PROGRAM: Fur Business & Manufacturing Techniques
LOCATION: Kensington Campus
LENGTH: 40 Weeks (2 semesters)
CERTIFICATION: Certificate
PREREQUISITE: AS542 or entrance test.

GBC CODE: FT543
FEE: $5 per

The only one in Canada, this program will give men and women an integrated program in fur; it will develop in them skills in, and knowledge of, the industry and its materials, techniques and products; it will equip them for gainful employment by standardizing general and technical fur knowledge in such a way that they will be able to work profitably in any division in the fur industry and in some other trades where fur is used.

	Semester I	Hours per Week	Credit Units per Semester
FUR 543	Fur Theory and Recognition	6	5.5
FUR 544	Fur Manufacturing Techniques	12	8.0
FUR 545	Fur Fashions	6	4.5
FUR 547	Fur Marketing	2	2.0
ENG 551	Vocabulary of Fashion	3	3.0
FASH 500	Fashion Business Routines	1	1.0
		30	24.0

	Semester II		
FUR 553	Fur Theory & Recognition (Sec. 2)	6	5.5
FUR 554	Fur Manufacturing Techniques (Advanced)	12	8.0
FUR 555	Fur Fashion and Design	6	4.5
FUR 557	Fur Marketing (Advanced)	2	2.0
ENG 561	Vocabulary of Fashion (Sec. 2)	3	3.0
FASH 501	Fashion Business Procedures	1	1.0
		30	24.0

A minimum of 2 weeks on-the-job training is required during semester II.

A fur sample-book is a required project in FUR 543.

FUR 543, 544, & 545 are also available days as part-time courses.

All courses available full-time or part-time.

PROGRAM: Furniture Renovation Technician
LOCATION: Kensington Campus
LENGTH: 2 Years
CERTIFICATION: Diploma
PREREQUISITE: Ontario Secondary School Graduation Diploma or equivalent

GBC CODE: FT104
FEE: $260 per year

This program will prepare a student for employment in the areas of furniture finishing, cabinet making, and furniture upholstery. A graduate will understand furniture layout, construction, and assembly; this will enable him to step into supervisory, buying, or selling positions or to engage in the assessing and restoring of antiques.

FIRST YEAR	Semester I	Hours per Week	Credit Units
FURN 101	Cabinet and Chair Making	7	4.0
FURN 102	Wood Machining	3	2.0
FURN 103	Finishing	4	2.0
FURN 104	Upholstery	10	5.0
FURN 105	Materials	2	2.0
FURN 106	Technical Drawing & Blueprint Reading	3	3.0
FURN 108	Factory Organization	1	1.0
		30	19.0

FIRST YEAR	Semester II		
FURN 151	Cabinet and Chair Making	6	3.0
FURN 162	Wood Machining	4	2.0
FURN 163	Finishing	4	2.0
FURN 154	Upholstery	10	5.0
FURN 155	Materials	1	1.0
FURN 156	Technical Drawing	2	2.0
FURN 157	Design	1	1.0
FURN 158	Factory Organization	1	1.0
		30	17.0

SECOND YEAR	Semester III - (Woodwork Option)		
FURN 201	Cabinet and Chair Making	16	8.0
FURN 202	Wood Machining	8	4.0
FURN 205	Materials	1	1.0
FURN 206	Technical Drawing	2	2.0
FURN 207	Design	2	2.0
FURN 208	Factory Organization	1	1.0
		30	18.0

SECOND YEAR	Semester III - (Finishing Option)		
FURN 203	Finishing	22	11.0
FURN 205	Materials	1	1.0
FURN 207	Design	2	2.0
FURN 208	Factory Organization	1	1.0
FURN 209	Colour	4	4.0
		30	19.0

PROGRAM: Furniture Renovation Technician (Continued)

		Hours per Week	Credit Units
SECOND YEAR	Semester III - (Upholstery Option)		
FURN 204	Upholstery (including Field Trips)	20	12.0
FURN 207	Design	2	2.0
FURN 208	Factory Organization	1	1.0
FURN 214	Upholstery Methods	4	4.0
FURN 205	Materials	1	1.0
FURN 210	Styles and Colour	2	2.0
		30	22.0
SECOND YEAR	Semester IV - (Woodwork Option)		
FURN 251	Cabinet and Chairmaking	16	8.0
FURN 262	Wood Machining	8	4.0
FURN 255	Materials	1	1.0
FURN 256	Technical Drawing	2	2.0
FURN 257	Design	2	2.0
FURN 258	Factory Organization	1	1.0
		30	18.0
SECOND YEAR	Semester IV - (Finishing Option)		
FURN 263	Finishing	21	11.0
FURN 255	Materials	1	1.0
FURN 257	Design	2	2.0
FURN 258	Factory Organization	2	2.0
FURN 259	Colour	4	4.0
		30	20.0
SECOND YEAR	Semester IV - (Upholstery Option)		
FURN 254	Upholstery (including Field Trips)	22	14.0
SBM 132	Small Business Management	2	2.0
FURN 258	Factory Organization	1	1.0
FURN 260	Costing	1	1.0
FURN 261	Re-cover Estimating	1	1.0
FURN 264	Antique Upholstered Furniture	2	1.0
FURN 255	Materials	1	1.0
		30	21.0

PROGRAM: Furniture Refinishing & Repair
LOCATION: Kensington Campus
LENGTH: 32 Weeks
CERTIFICATION: Certificate
PREREQUISITE: Keen interest; ability to follow instructions in English.
GBC CODE: FT544
FEE: $ 5 per week

Through the project method, each student works at his own pace, performing the operations of furniture construction, cabinet making, and finishing; such is his essential preparation for progression into the field of restoring, repainting and refinishing of fine pieces of furniture. This 32-week program serves as an excellent basis for an industrial beginning.

		Hours per Week	Credit Units
FURN 552	Woodwork Refinishing	28	21.0
MATH 534	Mathematics For Design	2	2.0
		30	23.0

PROGRAM: Furniture Upholstery & Repair
LOCATION: Kensington Campus
LENGTH: 40 Weeks
CERTIFICATION: Certificate
PREREQUISITE: Keen interest; ability to follow instructions in English.
GBC CODE: FT545
FEE: $5 per week

Repairing upholstered furniture and the complete reupholstery of fine furniture require a worker possessing abilities as a pattern maker, a cutter, a sewing machine operator, a seat maker, an arm maker, a back maker and a trimmer. Graduates of this program receive a sound background in all these areas, with the result that they can enter any phase of employment pertaining to the furniture upholstery industry.

		Hours per Week	Credit Units
FURN 553	Furniture Upholstery, Sewing, Cutting	30	22.0

PROGRAM: Hairstyling for Barbers GBC CODE: FT572
LOCATION: Kensington Campus FEE: $5 per week
LENGTH: 6 Weeks
CERTIFICATION: Certificate
PREREQUISITE: Current barbering licence (Ontario): good health

A man holding a certificate of qualification in barbering can learn the techniques necessary for originating and effecting styles for men, through the interpretation of the client's wants, so that a pleasant overall appearance is created.

		Hours per Week	Credit Units
STYL 510	Styled Hair Cutting: Theory	2	2.0
STYL 511	Styled Hair Cutting: Practice	15	9.5
STYL 512	Blowing and Curling: Theory	2	2.0
STYL 513	Blowing and Curling: Practice	4	3.0
STYL 514	Permanent Waving & Colouring	5	3.5
STYL 515	Chemical Hair Straightening: Theory	1	1.0
STYL 516	Men's Hairpieces, Fit, etc.: Theory	1	1.0
		30	21.0

PROGRAM: Industrial Power Sewing GBC CODE: FT542
LOCATION: Kensington Campus FEE: $5 per week
LENGTH: 8 Weeks (intake every Monday)
CERTIFICATION: Certificate
PREREQUISITE: Evidence of digital dexterity

This is a concentrated performance objective program leading in progressive steps from orientation to facility control and speed in the operation of the single-needle lockstitch industrial sewing machine. Rhythm and stamina are stressed.

		Hours per Week	Credit Units
SEW 541	Orientation - Industry Familiarization Machine Control Stitching Assembly Stamina	30	15.0

When performance objective is reached before 8 weeks, student may be instructed in SEW 542 (Serger), SEW 543 (Blind-Stitch) and/or SEW 544 (Button-Hole and Button Sew).

Students will enter employment upon graduation. This program is endorsed by the Apparel Manufacturers' Association of Ontario

PROGRAM: Jewellery Arts GBC CODE: FT102
LOCATION: Casa Loma Campus FEE: $260 per year
LENGTH: 2 Years (Technician) Optional 3rd Year (Technologist)
CERTIFICATION: Diploma (Technician - 2 Years) Diploma (Technologist - 3 Years)
PREREQUISITE: Ontario Secondary School Graduation Diploma of the 4 or 5 year program or equivalent preferably with art options or mature student status with demonstrated interest and/or ability.

Specialization is growing and our jewellery arts program is designed with this in mind. The initial 10 weeks of the 2-year program are devoted to the care and use of tools and equipment, basic processes, techniques, and elementary design. During the balance of the first year and the whole of the second year, students may select an area of concentration: goldsmithing, gem-setting, engraving, or silversmithing. In order to qualify for a certificate, a student must participate in all designated areas in order to gain sufficient credits: 20 credit hours for the first year and 21 credit hours for the second year. A third year of 23 credit hours is also offered.

FIRST YEAR	Semesters I & II (Specialization depends on achievement in first 10 weeks)	Hours per Week	Credit Units per Semester
JWL 160	Introduction to Jewellery	)	)
JWL 161	Goldsmithing	)	)
OR		) 14	) 6.0
JWL 162	Gem-setting	)	)
OR		)	)
JWL 163	Engraving	)	)
OR		)	)
JWL 164	Silversmithing	)	)
JWL 165	Theory of the Area of Specialization	2	2.0
MET 166	Metallurgy	1	1.0
GEM 167	Gemmology	2	2.0
CHEM 168	Chemistry	1	1.0
DES 169	Design	3	2.0
ENG 132	Language and Communication	2	2.0
SBM 132	Small Business Management	2	2.0
ENA 170	Enamelling	3	2.0
		30	20.0

PROGRAM: Jewellery Arts (Continued)

SECOND YEAR	Semester III & IV (Specialization depends on achievement in 1st year)	Hours per Week	Credit Units per Semester
JWL 261/ 271	Goldsmithing	)	)
OR		)	)
JWL 262	Gem-setting	)	)
OR		) 19	) 11.0
JWL 263	Engraving	)	)
OR		)	)
JWL 264	Silversmithing	)	)
JWL 265	Theory of the Area of Specialization	3	3.0
MET 266	Metallurgy	1	1.0
GEM 267	Gemmology	2	2.0
DES 269	Design	3	2.0
ENA 270	Enamelling	2	2.0
		30	21.0

THIRD YEAR Semesters V & VI

Programs are arranged on an individual basis.

JWL 361	Goldsmithing	)	
JWL 362	Gem-setting	)	
JWL 363	Engraving	) 23	16.0
JWL 364	Silversmithing	)	
JWL 365	Theory	2	2.0
GEM 367	Gemmology	2	2.0
DES 369	Design	3	3.0
		30	23.0

PROGRAM: Baking Pre-Employment
LOCATION: Kensington Campus
LENGTH: 40 Weeks
CERTIFICATION: Certificate
PREREQUISITE: Ontario Grade 10 or equivalent
GBC CODE: F541
FEE: $5 per week

To prepare students, who do not meet apprenticeship prerequisites, for a career in the Canadian baking industry, with special reference to the in-store bakery and craft-style bakery.

BASIC		Semester I	ADVANCED		Semester II
BK	515	Bread Craft	BK	525	Bread Craft
BK	517	Cake Craft	BK	526	Cake Craft
BK	518	Cookie Craft	BK	527	Pastry Craft
BK	516	Pastry Craft	BK	519	Decorating Craft
BK	510	Theory Baking	BK	521	Related Theory
BK	511	Related Theory	BK	520	Theory Baking
BK	540	Baking Management	BK	540	Baking Management
BK	513	Nutrition	MATH	521	Mathematics
MATH	511	Mathematics	ENG	521	English
ENG	511	English			

PROGRAM: Bartending
LOCATION: Kensington Campus
LENGTH: 15 Weeks
CERTIFICATION: Certificate
PREREQUISITE: Ontario Grade 10 or mature student; no apparent physical defects or speech impediments; neat and clean appearance; pleasant and outgoing personality
GBC CODE: F575
FEE: $5 per week

Bartending: to train men and women as bartenders (stool & service) for licensed establishments in the food and hospitality industry.

BAR	500	Human Relations
BAR	502	Ontario Liquor Law
BAR	503	Mixology I
BAR	504	Bar Management
BAR	505	Accounting
BAR	506	Beverage Theory
BAR	507	Practical Experience

PROGRAM: Chef Training Pre-Employment
LOCATION: Kensington Campus
LENGTH: 40 Weeks
CERTIFICATION: Certificate
PREREQUISITE: Ontario Grade 10

GBC CODE: F742
FEE: $200

Graduates of this program will find unlimited opportunities for gainful employment in all areas of the food service industry, including hotel kitche restaurants, institutions, commercial and industrial catering organizations. Evening banquets are considered an essential part of this program. Candidat must be prepared to complete a minimum of 30 banquet hours during the progra

SEMESTER I			Hours per week
TF	731	Theory of Food	5
BK	730	Theory of Baking	1
MC	730	Theory of Meat	1
HIND	730	Kitchen Management	2
FP	730	Quantity Food Preparation Practical	12
BK	732	Practical Baking	3
MC	732	Practical Meat Cutting	1
MATH	735	Business Mathematics	2
ENG	741	Language & Communication	2
NUT	731	Nutrition	1
CONV	710	Convenience Food	1
			31

SEMESTER II			Hours per we
TF	731	Theory of Food	3
BK	730	Theory of Baking	2
HIND	730	Kitchen Management	4
FP	731	Advanced Quantity Foods	12
BK	733	Advanced Baking	3
MC	732	Advanced Meat Cutting	1
MATH	735	Business Mathematics	2
ENG	741	Lang. & Communication	2
MC	730	Theory of Meat	1
CONV	720	Convenience Food	1
			31

PROGRAM: Cook Training
LOCATION: Kensington Campus
LENGTH: 20 Weeks
CERTIFICATION: Certificate
PREREQUISITE: Ontario Grade 10 or equivalent

GBC CODE: F573
FEE: $5 per week

This program is designed to prepare men and women for a career in profession cooking. Graduates are encouraged to enter the apprentice chef training program and complete the requirements for the provincial certificate of qualification as a journeyman chef. Evening banquets are considerd an essential part of the program. Candidates must be prepared to complete a minimum of 30 banquet hours during the program.

TF	531	Theory of Food
BK	531	Theory of Baking
MC	530	Theory of Meat
HIND	530	Kitchen Management
FP	530	Quantity Food Preparation Practical
BK	532	Practical Baking
MC	531	Practical Meat Cut
MATH	535	Business Mathematic
ENG	541	Lang. & Communicati
NUT	531	Nutrition
CONV	510	Convenience Food

PROGRAM: Dietary Services Administration
LOCATION: Kensington Campus
LENGTH: 2 Years
CERTIFICATION: Diploma
PREREQUISITE: Ontario Secondary School Graduation Diploma, with a minimum of 60% in science.

GBC CODE: F102
FEE: $260 per year

Successful graduates of this course will find a demand for their services in the food service department at public and private institutions as assistants to administrative and therapeutic dieticians or food service managers.

FIRST YEAR Semester I			Hours per week
HIND	102	Dietary Orientation	1
FP	100	Food Preparation I	8
FT	100	Food Products & Standards	4
BIO	200	Microbiology	5
ENG	110	Lang. & Communication	2
MATH	110	Business Math I	3
HIND	105	Accounting I	3
			26

FIRST YEAR Semester II			Hours per week
BIO	202	Physiology	4
FP	100	Food Preparation II	8
EC	210	Economics	3
ENG	111	Lang. & Communication	2
CHEM	102	Chemistry	3
HIND	105	Accounting II	3
HIND	104	Menu Planning & Food Merchandising	3
			26

SECOND YEAR

This second year is now established on a co-operative basis with several health care facilities in Toronto.

Semester III			
FP	204	Food Preparation III	6
NUT	100	Nutrition	3
HIND	204	Human Relations	2
HIND	103	Food Cost Control	4
HIND	203	Food Facilities Layout	3
DR	102	Blue Print Reading & Drafting	1
HIND	109	Automatic Food Merchandising	2
HIND	208	Work Experience	8
			29

Semester IV			
HIND	210	Personnel Management	3
HIND	211	Payroll Analysis & Control	1
CHEM	301	Biochemistry	5
NUT	200	Therapeutic Nutrition	3
FP	203	Convenience Foods	2
HIND	216	Management Practice	16
HIND	213	Computer Assisted Menu Planning	1
			31

PROGRAM: Dining Room Service
LOCATION: Kensington Campus
LENGTH: 10 Weeks
CERTIFICATION: Certificate
PREREQUISITE: Ontario Grade 10 preferred; keen interest; pleasing personality and attractive personal appearance.

GBC CODE: F570
FEE: $5 per week

Graduates have ample opportunity to select positions from a variety of establishments in the food service industry. Many hotel dining rooms, clubs, railway dining cars, and motels employ only trained personnel or graduates of recognized programs. Many graduates have entered the industry directly as junior managers with restaurant chains; others find employment in institutions which permit advancement to the positions of captain, maitre d'hotel, assistant manager, manager, hostess or manageress. Evening banquet service is considered an essential part of the practical training; candidates must be prepared to complete a minimum of 30 banquet hours during the program.

HIND 532 Theory of Dining Room Service
HIND 533 Table Service
TF 533 Theory of Food
HIND 534 French Service
HIND 535 Beverage Service

PROGRAM: Retail Meat Cutting
LOCATION: Kensington Campus
LENGTH: 20 Weeks
CERTIFICATION: Certificate
PREREQUISITE: Ontario Grade 10; high standard of personal hygiene

GBC CODE: F544
FEE: $5 per week

Professional meat cutters are employed by the following organizations: independent meat stores, chain store meat departments, hotel and restaurant portion control supply houses, home freezer supply houses and catering organizations. Graduates of this course, because of their skill and immediate value to an employer, will experience little difficulty in finding an employer of their choice.

MC 533 Practical Meat Cutting
MC 534 Trade Theory
HIND 536 Business Procedure
SAN 531 Sanitation & Hygiene
NUT 530 Foods & Nutrition
MATH 535 Business Mathematics
ENG 541 Language & Communication

PROGRAM: Food Administration
LOCATION: Kensington Campus
LENGTH: 2 Years
CERTIFICATION: Diploma
PREREQUISITE: Ontario Secondary School Graduation Diploma or equivalent or journeyman chef certificate with 2nd class honours.

GBC CODE: F103
FEE: $260 per year

This course is designed to fill the growing need for men and women who are trained to administer food production on a large scale. Students are taught all aspects of food production, from purchasing to service, and, in addition, are schooled in modern methods of management.

Successful graduates of this course may look forward to well paid positions in restaurants, institutions, and industrial catering companies at the midmanagement levels.

FIRST YEAR	Semester I	Hours per week
HIND 101	Food Orientation	1
FP 100	Food Preparation I	8
FT 100	Food Products & Standards	4
SAN 100	Sanitation & Hygiene	3
ENG 110	Lang. & Communication I	2
MATH 110	Business Math I	3
HIND 105	Accounting I	3
HIND 104	Menu Planning	3
		27

	Semester II	Hours per week
NUT 100	Nutrition	3
FP 100	Food Preparation II	8
HIND 103	Food Cost Control	4
EC 210	Economics	3
ENG 111	Lang. & Communication	2
HIND 108	Beverage Prep. & Service	3
HIND 105	Accounting II	3
HIND 109	Automatic Food Merchandising	2
		28

SECOND YEAR

This second year program is now established on a co-operative basis with the food, beverage and administration departments of a large mid-city food complex.

	Semester III	
FP 204	Food Preparation III	6
HIND 209	Restaurant Accounting	3
HIND 204	Human Relations	2
HIND 202	Banquet Management	3
HIND 203	Food Facilities Layout	3
DR 156	Blueprint Reading & Drafting	1
HIND 205	Dining Room Service (½ sem)	6
HIND 207	Food Law (½ sem)	2
HIND 208	Work Experience (½ sem)	8
		26

	Semester IV	
HIND 210	Personnel Management	3
HIND 211	Payroll Analysis & Control	1
HIND 212	Advertising & Sales Promotion	3
HIND 213	Belcap	3
FP 203	Convenience Foods	2
HIND 215	Beverage Cost Control	2
HIND 216	Management Practice	16
		30

PROGRAM: Food Processing Technology GBC CODE: F101
LOCATION: Kensington Campus FEE: $260 per year
LENGTH: 3 Years
CERTIFICATION: Diploma
PREREQUISITE: Ontario Secondary School Graduation Diploma or acceptable equivalent, with a minimum standing of 60% in science (physics, chemistry, or biology), mathematics and English.

This is a co-operative program designed to prepare the student for a career in any one of the many branches of the food processing industry. Thorough schooling in the applied and biological sciences and their application to the processing of food will be offered. Concentrated instruction related to a specific branch of the food industry will be given in the final year.

During the three years, the student will spend 6 semesters of 15 weeks each in academic studies of the College and two semesters of 20 weeks each in practical work; during this latter period, he will be employed in the industry and will be paid at the prevailing rate.

Opportunities may be found in research and development, quality control, marketing, plant sanitation, production supervision, technical sales and service, government inspection and regulatory services.

FIRST YEAR	Semester I	Hours per week
CHEM 102	General Chemistry	5
PHYS 104	Applied Physics	5
MATH 100	Mathematics	4
BIO 100	Biology	5
FT 130	Food Preparation	8
ENG 100	Lang. & Communication	3
		30

FIRST YEAR	Semester II	Hours per week
CHEM 100	Chemistry	5
PHYS 104	Applied Physics	5
MATH 100	Mathematics	4
BIO 100	Biology	5
FT 131	Food Preparation	8
ENG 100	Lang. & Communication	3
		30

SECOND YEAR	Semester III	
CHEM 202	Organic Chemistry	6
FT 200	Food Engineering	3
FT 201	Food Processing	6
BIO 200	Food Microbiology	6
MATH 200	Mathematics	4
ENG 210	Communication in Industry	3
INST 111	Instrumentation	3
		31

SECOND YEAR	Semester IV	
CHEM 202	Organic Chemistry	6
FT 200	Food Engineering	3
FT 201	Food Processing	6
BIO 200	Food Microbiology	6
MATH 200	Mathematics	4
	Industrial Relations	3
INST 111	Instrumentation	3
		31

THIRD YEAR	Semester V	
CHEM 300	Food Chemistry	3
CHEM 302	Food Analysis	9
SAN 300	Sanitation & Pollution	2
FT 300	Control & Evaluation of Food Quality	2
MATH 316	Elementary Statistics	2
FT 301	Food Processing Option	9
		3
		30

THIRD YEAR	Semester VI	
CHEM 300	Food Chemistry	3
CHEM 302	Food Analysis	9
SAN 300	Sanitation & Pollution	2
FT 300	Control & Evalution of Food Quality	2
MATH 316	Elementary Statistics	2
FT 301	Food Processing Option	9
		3
		30

PROGRAM: Hotel-Motel Administration GBC CODE: F104
LOCATION: Kensington Campus FEE: $260 per year
LENGTH: 2 Years
CERTIFICATION: Diploma
PREREQUISITE: Ontario Secondary School Graduation Diploma or equivalent

The growing hotel and motel industry offers a variety of equally interesting career opportunities. Many, possibly the majority, of the jobs in the industry involve almost constant contact with the public, and require the sort of personality that can readily adapt to the often demanding situations which may arise. However, there are opportunities as well for the person with an analytical turn of mind. The course delves into all aspects of hotel and motel management, and thus permits the student to become acquainted with the hotel and motel field as a whole, so that he can, upon graduation, decide in which particular area he wants to specialize. Graduates of the course will be able to find employment in the front office, sales, catering, beverage, accounting, personnel, and other departments of the hotels and motels, as well as in related areas such as the institutional and restaurant catering field.

FIRST YEAR	Semester I	Hours per week
HIND 100	Hotel Orientation	1
FP 100	Food Preparation I	8
FT 100	Food Products & Standards	4
SAN 100	Sanitation & Hygiene	3
ENG 110	Lang. & Communication I	2
MATH 110	Business Math I	3
HIND 105	Accounting I	3
HIND 104	Menu Planning	3
		27

FIRST YEAR	Semester II	Hours per week
HIND 106	Front Office I	3
FP 100	Food Preparation II	8
HIND 103	Food Cost Control	4
EC 210	Economics	3
ENG 110	Lang. & Communication	2
HIND 108	Beverage Prep. & Service	3
HIND 105	Accounting II	3
HIND 109	Automatic Food Merchandising	2
		28

SECOND YEAR

This second year is now established on a co-operative basis with two well-known Toronto hotels.

	Semester III	Hours per week
HIND 106	Front Office II	5
HIND 200	Hotel Accounting	3
HIND 201	Hotel Housekeeping	3
HIND 204	Human Relations	2
HIND 202	Banquet Management	3
HIND 203	Food Facilities Layout	3
DR 156	Blueprint Reading & Drafting	1
HIND 205	Dining Room Service (½ sem)	6
HIND 208	Work Experience (½ sem)	8
HIND 206	Hotel Law (½ sem)	2
		28

	Semester IV	Hours per week
HIND 210	Personnel Management	3
HIND 211	Payroll Analysis & Control	1
HIND 212	Advertising & Sales Promotion	3
HIND 213	Belcap	3
HIND 214	Hotel Interior Design	2
HIND 215	Beverage Cost Control	2
HIND 216	Management Practice	16
		30

PROGRAM: Commercial Art GBC CODE: G543
LOCATION: Teraulay Campus
LENGTH: 40 weeks FEE: $5 per week
CERTIFICATION: Certificate
PREREQUISITE: Ontario Grade 10 or equivalent; mature students over 19 years of age may be accepted with lower academic standing, all must either submit a portfolio of 5 to 10 samples before acceptance or pass an entrance test.

A large number of graduates from this course have been placed as junior artists and designers in many of Metropolitan Toronto's commercial art studios, advertising agencies, company advertising departments, printing specialty houses and departmental stores.

Semester I

GD500	Foundation Drawing
GD501	Life Drawing
GD502	Alphabet Lettering
GD503	Foundation Design
GD504	Foundation Color
GD505	Foundation Techniques
GD506	Foundation Mechanical

Semester II

The student completes projects as he would in a commercial art studio. These projects cover all aspects of commercial art, such as packaging, advertising art, direct mail, folders, etc. The student should have about 20 samples to show for employment.

GD510	Package Design
GD511	Advertising Art
GD512	Promotional Art
GD513	Corporate Design
GD514	Life Drawing
GD515	Typography

PROGRAM: Film Imposition & Printing Surface Preparation for Typographers GBC CODE: G574
LOCATION: Teraulay Campus
LENGTH: 12 weeks FEE: $5 per week
CERTIFICATION: Certificate
PREREQUISITE: Journeyman typographer with aptitude for accurate, careful hand work and the ability to visualize the finished product at the film stripping stage.

This is one of the principal areas where there will be an increasing demand in the printing industry, as it converts from letterpress to offset press techniques. Graduates are trained in film-stripping and platemaking, including process color work.

GR510	Film Imposition & Printing Surface Preparation (Basic black and white)
GR511	Film Imposition & Printing Surface Preparation
GR512	Film Imposition & Color Printing Surface Preparation (Process color)

PROGRAM: Graphic Arts (Printing Technician) GBC CODE: G101
LOCATION: Teraulay Campus
LENGTH: 3 years FEE: $260 per year
CERTIFICATION: Diploma
PREREQUISITE: O.S.S.G.D. or equivalent; or Ontario grade 10 with success in high school printing course of grade 11 or 12; or industrial experience.

The graphic arts industry plays an important role in the economy of the Province of Ontario and the City of Toronto in particular. It is experiencing continuous growth within the College environment; the instruction, equipment and facilities enable students to achieve up-to-date proficiency in all phases of operation. Those who enter the printing profession from these programs will be versatile enough to meet the challenge of technological change in the next decade.

All graphic arts printing technician technical courses are presented in a block system. Each technical course requires one block during the academic year. A block is 20 actual successive working days of 4 hours per day. Academic courses are presented simultaneously in a semester system totalling 10 hours per week. A semester consists of four blocks and concurrent academic work.

FIRST YEAR	Semesters I & II	Credit Units
GR100	Layout, Design, Typography	4
GR101	Hot Metal Composition	4
GR105	Photomechanical Reproduction	4
GR110	Film Imposition & Printing Surface Preparation	4
GR114	Machine Printing (Letterpress)	4
GR115	Machine Printing (Basic Offset)	4
GR116	Machine Printing (Offset)	4
GR125	Bindery	4
PHYS105	Physics (1st semester only)	4
CHEM105	Chemistry (2nd semester only)	4
MATH105	Mathematics	8
ENG100	Language & Communication	4
		52

NOTE: Students must either type or be prepared to take a 20-hour lumisonic typing course in the 1st year.

SECOND YEAR	Semesters III & IV	
GR202	Photocomposition, keyboarding, tape processing and film processing	3.5
GR205	Photomechanical Reproduction	3.5
GR210	Film Imposition & Printing Surface Preparation	3.5
GR214	Machine Printing (Flexo)	3.5
GR215	Machine Printing (Rotogravure)	3.5
GR216	Machine Printing (Offset)	3.5
GR217	Machine Printing (2 Color Offset)	3.5
GR225	Bindery	3.5
GR220	Quality Control	4
ELTC214	Electronics	8
MATH205	Mathematics	8
ENG200	Language & Communication	4
		52

PROGRAM: Graphic Arts (Printing Technician) (Continued)

THIRD YEAR/TECHNICAL OPTIONS

Semesters V & VI

The student may select one major area and one minor area for technical specialization from the list following:

1. Type Composition (design, mark-up, tape input, advanced keyboard, paste-up, computer peripherals)
2. Photomechanical Reproduction, Film Imposition and Printing Surface Preparation.
3. Machine Printing (two-colour offset, rotogravure, flexo, die cutting and embossing)
4. Binding and Finishing
5. Quality Control and Statistics

Of the eight technical blocks in third year, six will be in the area of major specialization and two in the area of minor specialization; all will be at the GR300 level. A major technical report is required.

In addition, related studies in one or more of the following:

Humanities (including studies of the trade union movement), Industrial Psychology and Personnel Relations, Science, Electronics, Business Administration or Graphic Arts Administrative Processes in Cost Estimating and Production Control using various approaches.

PROGRAM: Graphic Design Technician GBC CODE: G102
LOCATION: Teraulay Campus
LENGTH: 2 years (optional 3rd year) FEE: $260 per year
CERTIFICATION: Diploma
PREREQUISITE: O.S.S.G.D. or equivalent; mature students over 19 years of age may be accepted with lower academic qualifications. All must submit a portfolio of 5 to 10 work samples before being approved.

Metropolitan Toronto is Canada's largest centre for opportunities in advertising art and graphic design. For over five years we have been placing a very high percentage of graduates in studios, both large and small, in the Toronto area. The opportunity exists for students to develop a complete portfolio of sample work, from design sketches to finished art to printed pieces, as they would when on the job; this is made possible, because the department possesses the largest technical printing training facilities in Canada.

FIRST YEAR	Semester I	Hours per week	Credit Units
GD100	Foundation Drawing	6	5
GD101	Life Drawing	4	3
GD102	Alphabet Lettering	3	1.5
GD103	Foundation Design	6	5
GD104	Foundation Colour	2	1.5
GD105	Foundation Techniques (ROM)	3	3
GD106	Foundation Mechanicals	4	3
GD107	Foundation History of Art	2	2
		30	24
	Semester II		
GD100	Foundation Drawing	3	2
GD101	Life Drawing	7	6
GD102	Alphabet Lettering	4	3
GD103	Foundation Design	6	5
GD105	Foundation Techniques (ROM)	4	3
GD106	Foundation Mechanicals	4	3
GD107	Foundation History of Art	2	2
		30	24
SECOND YEAR	Semesters III & IV		
GD201	Illustration	3	2.5
GD202	Abstract Design	3	2.5
GD203	Graphic Design	3	2.5
GD204	Printmaking (Screen)	3	2.5
GD205	Graphic Techniques	3	2.5
GD206	Graphic Mechanicals	4	3
GD207	Historical Research	2	2
GD208	Packaging Mechanicals	3	2.5
GD209	Life Painting & Drawing	3	2.5
GD210	Packaging Design	3	2.5
		30	25

PROGRAM: Offset Printing GBC CODE: G542
LOCATION: Teraulay Campus
LENGTH: 40 weeks FEE: $5 per week
CERTIFICATION: Certificate
PREREQUISITE: Ontario Grade 10 or acceptable equivalent of industrial experience.

This short technical program is designed to train an offset pressman in the operation of various types of small offset presses likely to be encountered in captive plants or small printing shops. Understanding the fundamentals of typesetting, line and halftone reproduction, printing surface preparation, binding and finishing, as well as press operation, will enable the graduate of this program to obtain optimum results from the equipment available at an employer's print shop.

Semesters I & II

GR530 Copy Preparation
GR534 Graphic Arts Camera Operation
GR536 Stripping & Plate Making
GR538 Machine Printing (Letter-Press)
GR540 Machine Printing (Offset)
GR542 Binding and Finishing

PROGRAM: Offset Printing for Letterpressmen GBC CODE: G570
LOCATION: Teraulay Campus
LENGTH: 12 weeks FEE: $5 per week
CERTIFICATION: Certificate
PREREQUISITE: Sufficient experience as a letter-press journeyman

This one-semester program is designed to meet the specific needs of the graphic arts industry to retrain letterpress journeymen for offset pressmanship and offset platemaking. Although this program is short, it is very intensive and provides adequate practical experience on a variety of medium- and large-size single color offset presses. Basic platemaking procedures are included.

GR515 Machine Printing (Basic Offset)
GR516 Machine Printing (Offset, Single Color Presses - Basic)
GR517 Machine Printing (Offset, Single Color Presses - Advanced)
GR518 Machine Printing (Process Color)

Related Theory

PROGRAM: Photo Composition and Paste-Up Assembly for Typographers GBC CODE: G572
LOCATION: Teraulay Campus
LENGTH: 12 weeks FEE: $5 per week
CERTIFICATION: Certificate
PREREQUISITE: Journeyman status as a typographer, an aptitude for careful accurate handwork, and the ability to visualize the finished product at the paste-up stage; mechanical aptitude and ability to learn basic binary logic, as measured by IBM data processing test.

A survey of the printing industry by the Toronto Typographical Union indicates that these are areas of increasing demand, as the industry converts to new techniques in composition and preparation methods.

TYP552 Typing (including Lumisonic Typing)
GR502 Tape-Keyboarding and Tape-Processing
GR508 Theory of Photo-Typesetting Equipment
GR504 Paste-up Assembly

PROGRAM: Photo Reproduction for Typographers GBC CODE: G573
LOCATION: Teraulay Campus
LENGTH: 12 weeks FEE: $5 per week
CERTIFICATION: Certificate
PREREQUISITE: Journeyman typographer and aptitude for camera work

This is one of the main areas where there is a growing demand in the printing industry. Graduates are trained black and white, line and halftone process camera men.

GR505 Photo Mechanical Reproduction (Basic black and white)
GR506 Photo Mechanical Reproduction (Basic half-tone)
GR507 Photo Reproduction (Advanced)

PROGRAM: Screen Printing GBC CODE: G540
LOCATION: Teraulay Campus
LENGTH: 40 weeks FEE: $5 per week
CERTIFICATION: Certificate
PREREQUISITE: Ontario Grade 10 or equivalent; mature students with aptitude as assessed by the instructor may be accepted with lower academic standing.

Screen printing is a rapidly growing segment of the specialized printing industries. Plastic, glass and metal surfaces; packaging, textiles, and wallpapers; signs and advertising posters and printed circuits are all produced by this process. Those with artistic and mechanical aptitude do particularly well at this work.

Semesters I & II

SP526 Basic Principles of Layout, Design & Typography
SP527 Photomechanical Reproduction (Line, Halftone, Basic Process Color-reproduction)
SP528 Film Imposition, Stencil Cutting and Screen Preparation
SP529 Manual and Mechanized Screen Printing Paper and Board
SP530 Mechanized Screen Printing (Other Substrates such as Plastics, glass, wood, metal, cloth, self adhesive films)

PROGRAM: Signwriting GBC CODE: G546
LOCATION: Teraulay Campus
LENGTH: 40 weeks FEE: $5 per week
CERTIFICATION: Certificate
PREREQUISITE: Ontario Grade 10 or a combination of education and experience considered equivalent by the admissions office.

Many large department stores, manufacturing companies, advertising agencies and retail outlets maintain a staff of signwriters to produce new signs, posters, and advertising displays.

Although the competition in this vocation is vigorous, there is ample opportunity for those who show creative ability and commercial effectiveness in their work.

Semester I

Sign 530 Basic Signwriting
Sign 531 Basic show card writing and pen lettering
Sign 532 Introduction to layout and colour

Semester II

Sign 533 Signwriting
Sign 534 Show card writing
Sign 535 Pen Lettering design and layout
Sign 536 Colour
Sign 537 Screen Process Printing (for the sign and show card industry)
Sign 538 Introduction to gold leaf
Sign 539 Introduction to plastic signs

PROGRAM: English as a Second Language GBC CODE: LI540
LOCATION: College Street Campus FEE: $5 per week
LENGTH: 24 weeks maximum
CERTIFICATION: Letter
PREREQUISITE: None

The aim of this program is to provide the adult New Canadian with a level of fluency in English that will allow him to obtain appropriate employment.

The course emphasizes oral performance. The development of literacy skills is fostered to the degree relevant to the student's background and goal.

PROGRAM: Ship's Cooks GBC CODE: F574
LOCATION: Kensington Campus FEE: $120
LENGTH: 24 Weeks
CERTIFICATION: Certificate
PREREQUISITE: Ontario Grade 10 or equivalent; presently employed as cook I, cook II, porter, or night cook on Great Lakes carrier ships.

This program is designed to provide the formal chef training that is so often lacking in those individuals who have grown into their jobs. Upon successful completion, the student should be able to fulfil his ship-board duties in a more skilful manner.

TF 531 Theory of Food
FP 530 Quantity Food Preparation (Practical)
BK 531 Theory Baking
BK 532 Practical Baking
MC 530 Theory of Meat
MC 531 Practical Meat Cutting
HIND 503 Food Cost Analysis & Control
SAN 532 Sanitation, Hygiene & Safety
NUT 531 Nutrition

PROGRAM: Nursing
LOCATION: See Below
LENGTH: 2 years
CERTIFICATION: Diploma
GBC CODE: NU 101
FEE: $260 per year

PREREQUISITE: Applicants should possess most of the following qualifications: an Ontario secondary school honour graduation diploma with six credits including biology, chemistry where possible, and an average of 60%; an Ontario secondary school graduation diploma, including second year mathematics, third year physics or biology and fourth year chemistry. A personal interview or proof of special aptitude may also be required.

General Information:

Effective September 1973, professional nursing education became the responsibility of the Colleges of Applied Arts and Technology. The nursing division of George Brown College is composed of five campuses formerly known as Nightingale, St. Joseph's Hospital, St. Michael's Hospital, Toronto General Hospital and Toronto Western Hospital (Atkinson). Graduates are eligible, after qualifying examinations, to become registered nurses in Ontario. Detailed information for the 1974 program may be obtained by contacting any of the nursing campuses or George Brown College, P. O. Box 1015, Station B, Toronto, Ontario, M5T 2T9.

Locations:

Nightingale Campus
2 Murray Street
Toronto, Ontario M5T 1T7

St. Joseph's Hospital Campus
50 Sunnyside Avenue
Toronto, Ontario M6R 2N7

St. Michael's Hospital Campus
35 Shuter Street
Toronto, Ontario M5B 1A5

Toronto General Hospital Campus
90 Gerrard Street West
Toronto, Ontario M5G 1J6

Toronto Western Hospital Campus
399 Bathurst Street
Toronto, Ontario M5T 2S8

PROGRAM: Fitness Instructor
LOCATION: Casa Loma Campus
LENGTH: 1 year
CERTIFICATION: Diploma
GBC CODE: PE140
FEE: $260

PREREQUISITE: O.S.S.G.D. or equivalent

This program will train men and women in the operation of facilities offered by fitness agencies; it pays special attention to physical testing procedures and the designing of exercise programs needed to produce the type of conditioning desired.

There will be extensive laboratory experience to enable the students to encounter at first hand the problems inherent in human physical fitness.

	Semester I	Hours per week Lecture	Lab
FIT100A	Introduction to Fitness Testing	3	3
FIT101A	Introduction to Anatomy	4	
FIT102	Applied Exercise Technique	1	2
ENG100	Language & Communication	2	
HEAL100	Health Studies	3	2
AQUA100	Aquatic Skill Developments	1	1
HEAL101	Athletic Injuries	2	
FIT103	Applied Fitness Research		2
HEAL102	Health Club - Business Administration - Operation - Maintenance	2	2
		18	12

	Semester II		
FIT100B	Introduction to Fitness Testing & Clinical Placement	4	6
FIT101B	Introduction to Anatomy	2	
FIT103	Psychology of Exercise	3	
ENG100	Language & Communication	2	
HEAL100	Health Studies	3	2
AQUA100	Aquatic Skill Developments	1	1
HEAL101	Athletic Injuries	2	
FIT103	Applied Fitness Research		2
HEAL102	Health Club - Business Administration - Operation - Maintenance	2	
		19	11

PROGRAM: Certified Building Custodian GBC CODE: ST573
LOCATION: Teraulay Campus
LENGTH: 14 weeks FEE: $5 per week
CERTIFICATION: Certificate
PREREQUISITE: Good physical condition; ability to follow instructions in English

This program will prepare students to satisfy the ever-increasing demands of properly trained personnel in the field of maintenance and care of office buildings, such as the Royal Trust Tower, Commerce Court, and the Toronto-Dominion Centre. Applicants must be physically capable of carrying out work routines, using hand tools, or sophisticated floor and carpet machines.

ENG541	Language & Communication
MATH546	Mathematics
BCU541	Custodial Theory
BCU542	Custodial Practice

PROGRAM: Commercial Vehicle Driving GBC CODE: ST574
LOCATION: Kensington Campus
LENGTH: 3 weeks FEE: $5 per week
CERTIFICATION: Certificate
PREREQUISITE: Grade 8 or equivalent; chauffeur's licence; physically strong

Students receive training in the safe operation of 5-ton standard commercial vehicles so necessary to enter the field of road transportation. To be eligible for the program applicants must possess a chauffeur's licence, an elementary education, and good health.

VEH510 Commercial Vehicle Operation

PROGRAM: Tractor Trailer Driving GBC CODE: ST575
LOCATION: Kensington Campus
LENGTH: 4 weeks
CERTIFICATION: Certificate
PREREQUISITE: Must have been employed as a driver of a standard commercial vehicle for not less than one year; in possession of a chauffeurs licence; and able to pass a driving test.

With modern driving becoming involved and often hazardous, a scientific approach in this field provides drivers with current knowledge in the latest methods of safe and economical operation. A knowledge of air brakes, multi-range transmissions,and tachometers will help drivers to maintain total control of the vehicle on the modern high-speed highway.

VEH511 Tractor Trailer Driving

APPRENTICESHIP PROGRAMS

Apprenticeship is a systematic program of on-the-job learning along with related class-room instruction; this combination of practice and theory is designed to produce a fully-qualified tradesman, who is frequently referred to as a journeyman.

The apprentice earns while he learns. Depending on the grade, the length of the apprenticeship program varies from two to five years.

For further information about apprenticeship programs, please contact the Industrial Training Branch of the Ontario Ministry of Colleges and Universities, 400 University Avenue, Toronto, Ontario, M7A 1C2. Telephone (416) 965-4211.

George Brown College is involved in apprenticeship programs for the following tradesmen:

	Educational Prerequisite	Total Length Of Program In Hours	College Classroom Time In Weeks
Air Conditioning & Refrigeration Worker	Equiv. Gr. 10	* 5 x 1800	# 8 - 7 - 7
Baker	Equiv. Gr. 8	2 x 2000	15 - 15
Barber	Equiv. Gr. 9	3 x 1500	18
Brick & Stone Mason	Equiv. Gr. 8	4 x 1600	8 - 7 - 7
Carpenter	Equiv. Gr. 10	3844 hr. min. 7200 hr. max.	8 - 7 - 7
Cement Mason	Equiv. Gr. 8	3 x 2000	8 - 8
Chef	Equiv. Gr. 10	3 x 2000	15 - 15
Electrician (Construction & Maintenance)	Equiv. Gr. 10	5 x 1800	7 - 7 - 8
Electronics Mechanic (Industrial Control)			8
Glazier & Metal Mechanic	Equiv. Gr. 10	4 x 2000	7 - 7 - 8
Hairdresser	Equiv. Gr. 9	3 x 1500	8 - 8
Ironworker (17 years of age)	Equiv. Gr. 10	3 x 2000	8 - 7 - 7
Lather	Equiv. Gr. 10	3 x 1800	10 - 10
Machinist	Equiv. Gr. 10	4 x 2000	8 - 7 - 7
Millwright	Equiv. Gr. 10	4 x 2000	8 - 7 - 7
Painter & Decorator	Equiv. Gr. 10	4 x 1800	8 - 7 - 7
Plasterer	Equiv. Gr. 8	4 x 1600	8 - 7 - 7
Plumber	Equiv. Gr. 10	5 x 1800	8 - 7 - 7
Radio & TV Service Technician	Equiv. Gr. 10	4 x 2000	18 - 18
Retail Meat Cutter	Equiv. Gr. 10	2 x 2000	18
Sheet Metal Worker	Equiv. Gr. 10	5 x 1800	8 - 7 - 7
Sprinkler & Fire Protection Installer	Equiv. Gr. 10	5 x 2000	7 - 7 - 8
Steamfitter	Equiv. Gr. 10	5 x 1800	8 - 7 - 7
Structural Steel Draftsman	Equiv. Gr. 10	3 x 2000	8 - 7 - 7
Toolmaker	Equiv. Gr. 10	4 x 2000	8 - 7 - 7
Watch Repairer	Equiv. Gr. 10	3 x 1800	24 - 8

Read: 5 periods of 1800 hours each period

Read: 8 weeks at the basic level, 7 weeks at the intermediate level, and 7 weeks at the advanced level

All apprentices graduating from the electrician program (No. 8 above) may take this program (No. 9) on a voluntary basis; it is offered during the fifth 1800-hour period of the electrician's program.

COURSE DESCRIPTIONS INDEX

COURSE CODE	COURSE NAME	PAGE
ACC	Accounting	143
ACOU	Acoustics	144
AD	Addiction Counselling	145
AIR	Air Conditioning	147
ANAT	Anatomy (Medical Secretarial Science)	148
ARCH	Architectural Technology	148
ARDR	Architectural Drafting	148
AT	Apparel Technology	150
BIO	Biology (Food Technology)	152
BUS	Business & Commerce	152
CHEM	Chemistry	153
CHI	Child Care	156
CIV	Civil Engineering	158
CO	Construction	159
COAT	Coatings Technology	160
DCW	Day Care Worker	161
DENT	Dental Programs	163
DES	Design (Jewellery)	165
DIC	Dictaphone	165
DR	Drafting	165
DRES	Dressmaking	165
EC	Economics	167
ED	Education	168
EDP	Electronic Data Processing	168
EL	Electrical Technology	169
ELTC	Electronic Technology	174
ENA	Enamelling	180
ENDR	Engineering Drafting	180
ENG	English	184
ES	Elective Studies	187
FAB	Fabric Technology	187
FASH	Fashion	187
FIT	Fitness	188

COURSE CODE	COURSE NAME	PAGE
FP	Food Preparation	188
FT	Food Technology	189
FUR	Fur Technology	190
FURN	Furniture	192
GD	Graphic Design	194
GEM	Gemmology	196
GR	Graphic Arts	197
HEAL	Health	199
HIND	Hotel Industry	200
HT	Heating	204
INST	Instrumentation	204
JWL	Jewellery	206
LAW	Law (Business & Commerce)	207
MACH	Machine Shop	208
MARK	Marketing	209
MATH	Mathematics	211
MECH	Mechanics	216
MED	Medical Technology (Orthotics-Prosthetics)	218
MET	Metallurgy	219
NC	Numerical Control	219
NUT	Nutrition	220
OP	Office Practice	220
PAT	Pattern Making	221
PHD	Physical Distribution	223
PHYS	Physics	224
PIT	Precision Instrument Techniques	227
PL	Plastics	228
PM	Precision Measurement	230
PROS	Prosthetics	230
PSY	Psychology	231

COURSE CODE	COURSE NAME	PAGE
SAN	Sanitation	233
SBM	Small Business Management	233
SEW	Sewing	233
SH	Shorthand	234
SOC	Sociology	235
STR	Structural Steel	235
SURV	Surveying	235
TD	Tool Design	237
WACH	Watchmaking	237
WELD	Welding	238

ACCOUNTING

ACC 100 / Introduction to Accounting I

Accounting cycle including columnar journals, subsidiary ledgers, work sheet, adjusting and closing entries. Financial statements. The voucher system and internal control. Cash and accounts receivable. Notes and interest. Valuation of inventories. Depreciation and depletion. Payroll Accounting.

ACC 101 / Introduction to Accounting II

Partnership accounting. Corporations: organization and operation; stock transactions; retained earnings and consolidations. Long-term liabilities. Accounting for investments. Departmentalization and control. Manufacturing accounting.

ACC 102

Topics include partnerships and corporations, long-term liabilities, departmental and manufacturing accounting, budgeting, taxation, interpretation of financial statements, managerial divisions. Emphasis will be on accounting from the point of view of management analysis and control.

ACC 105 / Accounting - General S.S.

An introductory course designed to familiarize the student with the basic fundamentals of double-entry bookkeeping up to the preparation of a trial balance.

ACC 106 / Accounting - Legal S.S.

This course covers the basic fundamentals of double-entry bookeeping up to and including the preparation of a trial balance, and applies these principles to the bookkeeping needs of a legal form.

ACC 107 / Accounting - Medical S.S.

This course covers the basic fundamentals of double-entry bookkeeping up to and including the preparation of a trial balance and applies these principles to the bookkeeping needs of the medical profession.

ACC 200 / General Accounting I

The emphasis is on accounting from the point of view of management analysis and control. Topics include capital and debt structure of a limited company, analysis of financial statements and statements of sources and applications of funds, taxes and their influence on business decisions, budgeting and its use by management for planning and control.

ACC 201 / Accounting Systems

This course is designed to familiarize the student with (a) the information needs of management, (b) reports issued to management for decision making, (c) information systems for collection of data, and (d) the principles and philosophies involved in systems design and installation.

ACC 202 / Cost Accounting I

The aims of this course are (a) to teach the basic concepts and principles of cost accounting, (b) to teach the concepts of materials, labour and overhead as applied to cost accounting, (c) to develop cost accounting techniques to be applied to the solution of problems and case studies.

ACCOUNTING - Cont'd

ACC 203 / General Accounting II

The aim of the course is to familiarize students with management accounting through the application of financial accounting. Topics include changes in working capital, statements of cash flows, break-evens, variables, analysis, measurements, ratios, short and long-term budgets, present value of cash flows and comparison of long range alternate plans, return on capital.

ACC 204 / Cost Accounting II

The aims of the course are (a) to develop and expand on the cost accounting principles introduced in ACC 202, (b) to develop costing techniques for budgeting control of materials, labour and overhead, (c) to teach the principles of process cost accounting and cost of production reports, (d) to instruct on the preparation of budgets; also cash flows, commercial expenses and forecast statements.

ACC 205 / Auditing and Taxation

Principles and practices of auditing, with particular emphasis on the understanding of a good system's design and the evaluation of internal control. Year-end verifications of assets and liabilities. Income Tax Act and its regulations. Preparation of individual and corporate tax returns. Taxation theory.

ACOUSTICS

ACOU 200 / Introduction to Acoustics

A basic course in Sound Science; a review of the physics necessary to provide a background to the Physics of Sound; Physics of Sound; Physiology of the Ear; Hearing; Psychology of Hearing. An introduction to the measurement of Sound and Noise; Hearing Protection; Audiometry.

ACOU 201 A & B Noise Analysis & Control

A detailed study of the construction, use and maintenance of the instruments for the measurement and analysis of Sound and Noise; the techniques of Measurement, Analysis and Reporting of Sound and Noise; an examination of the techniques of Noise Control.

ACOU 203 / Vibration and Shock Analysis & Control

A detailed study of Vibration, Low Frequency Noises and of Noises of Short Duration - Impace Noises: the Construction, Use and Maintenance of the instruments for the measurement and analysis of Vibration and Shock; an examination of the technique of Shock and Vibration Control.

ACOU 205 A & B Acoustical Properties of Materials

An examination of the reflective and absorptive properties of common building materials; Architectural and industrial Sound and Noise Control materials; materials and objects used in Interior Decorating and Office Landscaping.

ACOU 206 / Noise Control Standards

An examination of Federal, Provincial and Municipal Laws, Building Codes & Noise Abatement Standards; Workman's Compensation Laws re - Hearing Protection, Hearing Loss and Deafness - case studies.

ACOUSTICS - Cont'd

ACOU 211A / Building Acoustics 1

The acoustic aspects of Architectural Design; Transmission of sound through walls, floors and ceilings; reflection of sound in rooms; reverberation absorption, echo and whispers; acoustical control of air borne sounds through room and building design.

ACOU211B / Building Acoustics 11

An examination of the Mechanical systems in a building: The Generation, Transmission and Control of Noise from heating and air-conditioning systems; water and plumbing noises; rotodynamic noise.

ACOU 213 / Sound Lab

A workshop on the Measurement Analysis and control of sound, noise and vibration; measurement of ambient noise levels indoors and outdoors; noise zones and surveys; measurement and analysis of vehicular, construction and industrial noise; noise from consumer products; control of air borne and transmitted noise in buildings; measurement and control of vibration, impact noise and rotodynamic noise.

ACOU 214 / Drafting

Review of drafting fundamentals. Architectural and structural symbols and conventions. Study of national building codes. Preparation of working drawings as related to acoustics. Materials used in construction.

Mechanical drawing techniques including symbols and conventions for layouts of heating, ventilating, air conditioning, plumbing, pipin g and electrical systems as used in building construction with special attention to acoustical problems. Materials used in construction.

ADDICTION COUNSELLING

AD 100 / Field Practice

Field practice is an integral part of the program in affording students supervised clinical experience in a variety of settings. Field experience is considered an essential concomitant to the behavioural sciences.

AD 101 / Human Growth and Behaviour

A sequential view of the process of human growth and personality development as a means to develop some understanding of the physical, socio-cultural and emotional aspects of development throughout the life span.

AD102 / Group Process

Students meet regularly in a group seminar, thus experiencing the dynamics of group interaction. The group process is used as interpretive behavioural material.

AD 103 / Social Issues, Problems & Services

A study of the development and adaptation of institutions in response to community needs and pressures. Levels of responsibility: federal, provincial, municipal and private. The development of agencies providing education, health, welfare and other forms of service. Philosophies concerning the role of law in controlling alcohol and drug use, and the relevant legislation.

ADDICTION COUNSELLING - Cont'd

AD 104 / Pharmacology and Physiology

Pharmacology: The program should provide students with information and experience which will alter their attitudes and values toward the use of drugs in such a way that patients in turn will be influenced to improve their attitudes toward drugs through the natural interchange of thought occurring in treatment sessions. Physiology: Basic concepts of anatomy & physiology; how the body is involved with drugs and how it functions with without their influence.

AD 105 / Basic Studies in Addictions

A study of mind altering drugs. Why man uses drugs; religions, medical endurance, enhancing and recreational. A study of the chemophilic age.

AD 106 / Theory, Methods & Practice of Therapy

A study of the therapeutic procedures and treatment philosophies related t personality patterns: Freudian theories of personality development will b used as a base from which to analyse the development of current treatment philosophies including those of Adler, Jung, Erikson, Rogers, Maslow, Glas and others. Various techniques used in practice in individual group and family therapy will be demonstrated.

AD 107 / Introductory Sociology

A survey of the field of sociology; culture and society, institutions, organizations, ecology and population, disorganization and deviant behavio ethnic communities and other aspects of group living.

AD 108 / Values, Ethics & Professionalism

The purpose of this course is to encourage study and examination of the va and value conflicts involved in being a counsellor and how there values re to professional practice.

AD 110 / English (Optional)

For students who wish to improve their verbal and writing skills.

AD 200 Field Practice - Continuation of AD 100

AD 201 / Human Growth and Behaviour, Abnormal Development

A sequence of AD 101, the emphasis here is on abnormal development and dysfunction.

AD 202 / Group Process - Continuation of AD 102

AD 206 / Theory, Methods & Practice of Therapy - Continuation of AD 106

AD 207 / Sociology

Sociology of institutions. Special emphasis on the functions of the fam as it is understood in various ethnic communities. The changing role of family. The sociology of deviant behaviour.

AD 209 / Research & Independent Studies

A study of research models and their applications; critical appraisal of research results. Students will conduct a study in a related area of special interest to them.

ADDICTION COUNSELLING - Cont'd

AD 211 / Community Practice

Application of the therapeutic "Growth" model to community problems and dysfunction.

AIR CONDITIONING

AIR 100 / Refrigeration

Effect of heat; expansions of solids, liquids and gases, change of state, latent vs. sensible heat. Heat measurement; basic system components; construction and use of pressure - enthalpy diagram; interelationship of system components using P-H diagram. Types of compressors; types of evaporators; types of condensers; importance of head pressure control; air side and refrigerant side methods, system operating controls; system safety controls.

AIR 105 / Air Conditioning

Review of basic principles of physics pertaining to air conditioning; air and human comfort, factors affecting comfort of human beings. Use of psychrometic chart. Effects of external and internal shading devices. Basic heating and cooling load calculations by various methods and for various types of structure. Principles of distribution system design for various types of residential application. Introduction to ventilation and use of the equal friction chart.

AIR 107 / Hydronic Heating

Characteristics of heat, body comfort, and construction materials. Heat loss calculations by I. B. R. "Detailed" and "Modern" methods. Types of hydronic systems and component characteristics. Design of systems.

AIR 108 / Instrumentation

Use of instruments used in the operation and testing of heating, cooling and air conditioning systems.

AIR 109 / Electrical Fundamentals

Fundamentals of electricity as applied to heating, cooling and air conditioning systems.

AIR 200 / Refrigeration

Use of manufacturers data to select cooling towers and related equipment. Study of unitary, commercial industrial equipment, heat pumps. Use of psychrometrics chart in the selection of cooling coils. Refrigeration piping practice, sizing of refrigeration practice, sizing of refrigeration piping for allowable pressure drop and oil return to the compressor. Continuation of laboratory work of first year in system construction and analysis, testing, operating reports.

AIR 201 / Automatic Controls

Electric control circuits: two wire control circuits, three wire control circuits, floating and proportional control circuits. Electronic control circuits, electronic control units, and pneumatic control units. Commercial control systems: zone control for heating, control of unit heaters and ventilators, control of commercial vented fan heating and cooling systems, control of peripheral air conditioning units.

AIR CONDITIONING - Cont'd

AIR 203 / Air Conditioning Systems

Heating and cooling load calculations. Use of psychrometric chart. Air quantities for cooling requirements; effect of storage zoning, and pendulum effect, equipment selection. Central station: chillers, coils, heating and cooling, fans, refrigeration, unitary equipment. Water and air cooled rooftop units. Split systems. High pressure dual duct and induction systems: noise and vibration control.

AIR 205 / Estimating

Take-off mechanical working drawings for duct work, piping layouts and machine room layout. Bill of materials and costing for air conditioning of a commercial building and preparation of sales proposal.

ANATOMY

ANAT 100 / Anatomy and Physiology (Medical Secretary Related)

Structure and function of the human body, including abnormal: laboratory work terms, spelling and pronounciation.

ANAT 101 / Medical Terminology (Medical Secretary Related)

Emphasis is placed on terminology of diseases and disorders, including the abnormal; nomenclature and Theraputic action of common drugs.

ARCHITECTURAL TECHNOLOGY

ARCH 100 / Materials and Methods

The manufacture and use of cement, steel, brick, clay, wood and other building products.

ARCH 200 / Materials and Methods

Advanced methods and applications of building materials and products.

ARCHITECTURAL DRAFTING

ARDR 102 / Architectural Drafting I

Preparation of working drawings of plans, sections, elevations and details of frame and masonry construction; perspective drawings; rendering and model making.

ARDR 106 / Architectural Drafting I

Introduction to dimensions, symbols and conventions; methods and materials for light construction; study of the National Building Code, in conjunction with the preparation of working drawings.

ARDR 107 / Mechanical Installation Drafting I

Mechanical drawing techniques or plumbing, drainage, types of hot water heating, air handling, and water supply.

ARDR 108 / Structural Drafting I

Structural steel: Design of simple beams, simple connections, detailing practices. Reinforced Concrete: Framing plans; detailing beams, slabs, walls, bar schedules.

ARCHITECTURAL DRAFTING - Cont'd

ARDR 109 / Electrical Installation Drafting I

Studies of residential, commercial and industrial wiring systems in single and three-phase layout.

ARDR 111 / Mechanical Installations Drafting

Mechanical drawing techniques of plumbing, drainage, heating, air conditioning and electrical layout pertaining to building construction.

ARDR 112 / Drafting

Three-view drawing, alphabet of lines, dimensioning, sections, free-hand sketching, isometric drawing. Introduction to architectural drawing, types of construction, materials and structural members.

ARDR 115 / Structural Drafting

Interpretation and preparation for design drawings of structural steel and reinforced concrete structures.

ARDR 120 / Descriptive Geometry I

Theory of multiview projection; auxiliary views; points, lines and oblique surfaces in space; true length and true shape considerations; edge views, slopes, and angles.

ARDR 121 / Descriptive Geometry

Orthographic projection, isometric sketching, auxiliary and revolution methods, practical applications.

ARDR 124 / Drafting

The principles of engineering drawing, geometrical construction, orthographic, axonometrics, and oblique projection, dimensioning, sections and auxiliary views. Reading of architectural plans, introduction to piping and duct layout for ventilation, heating and air conditioning systems. Graphical representation of electrical wiring diagrams.

ARDR 154 / Art and Presentation

Freehand sketching, pictorial drawing, technical illustrating and model making.

ARDR 202 / Architectural Drafting II

Presentation and working drawings of commercial and institutional buildings, utilizing up-to-date procedures from actual case studies.

ARDR 220 / Descriptive Geometry II

Plane surfaces, intersections relating to lines, planes and figures, dihedral angles, revolutions, parallel and radial line development, triangulation and vectors.

ARDR 221 / Descriptive Geometry

Practical problems and drawing practices involving lines, planes, angles, intersections and curves.

ARCHITECTURAL DRAFTING - Cont'd

ARDR 228 / Air Conditioning and Refrigeration

Principles of refrigeration, types of systems, system design, combination systems.

ARDR 229 / Heating Systems

Principles of operation, types of systems, system design, fuel supply.

ARDR 230 / Plumbing Systems

Principles of design of various systems, including materials and methods.

ARDR 232 / Drafting

Systems of piping drawing, including piping symbols with drawing and sketching in multiview, isometric and oblique. Duct layout showing graphical symbols for heating, ventilating, air conditioning, plumbing, piping, valves and fittings. Reading mechanical, architectural and structural plans.

APPAREL TECHNOLOGY

AT 100 / Work Management I

Methods, time & motion studies with emphasis on sewing and cutting operatio

AT 101 / Work Management II

Standard data (sewing machine operators) - work station design and efficies

AT 121 / Industrial Organization I

Structure of the apparel industry including the flow of materials from fibr to finished garment in the consumers' hands.

AT 122 / Industrial Organization II

Structure and anatomy of various apparel plants in men's, women's, children and accessory fields.

AT 151 / Apparel Machine Technology I

Seaming and the machines - construction of various seams - tensions - threa needles, etc.

AT 152 / Apparel Machine Technology II

Some mechanics of sewing machines; history; justifying purchase, variations efficient uses and common repairs.

AT 161 / Operator Training I

Includes SEW 141, plus techniques for training production employees, single needle sewing machine; selection, orientation, evaluation of operators and cutters (Performance Objectives).

AT 162 / Operator Training II

Applying production standards and establishing wage rates (hourly and piec work), work incentives, motivation, etc.

APPAREL TECHNOLOGY - Cont'd

AT 171 / Apparel Production Management I

Human Relations as practiced in the efficient apparel plant and workroom; division of work and work loads; scheduling, etc.

AT 172 / Apparel Production Management II

Labor management & relations; unions, Privincial Industrial Standards Act, minimum wages, rating employees, etc.

AT 181 / Basic Math

For understanding computer operations.

AT 182 / Computer Mathematics

Elementary programming.

AT 200 / Work Management III

Section work and layouts for most efficient work flows in cutting room, sewing room, etc.

AT 201 / Work Management IV

Plant layout including inventory control and shipping room; scheduling shifts, co-ordinating section; transporters, etc.

AT 251 / Apparel Machine Technology III

Marking and cutting procedures; spreading machines; techniques of laying out fabric, marker-making (mechanical and electronic).

AT 252 / Apparel Machine Technology IV

Apparel construction sequences (men's, women's, children's wear); quality control; introduction to sophisticated machinery (numerical control, computer assisted, etc.).

AT 260 / Apparel Plant Supplies

Study of supplies and accessories, materials used in apparel construction and the garment itself; evaluating supplies for purchase; methods of purchasing - quantities, storage, etc.

AT 271 / Apparel Production Management III

Theories of behavioral psychology through Mazlow and Likkert; applications at supervisory levels (section head, foremen, etc.).

AT 272 / Apparel Production Management IV

Techniques of management including "Management by Objectives" (MBO).

AT 281 / Computer Mathematics III

Electronic data processing systems.

AT 320 / Large Plant Problems

Problem solving specifically related to plants with over 100 operators; case histories, role-playing.

APPAREL TECHNOLOGY - Cont'd

AT 370 / Multi-Plant Problems

Problem solving specifically related to companies with more than one plant; feeder plants; vertical and horizontal structure; international operations and their problems; case studies.

AT 371 / Apparel Production Management V

Staffing a plant including interviewing procedures; hiring, firing, promoting employees in fashion environments both union and non-union; handling temperamental artistic creative personnel in workrooms, studios, labs, fashion shows, etc.

AT 372 / Apparel Production Management

Motivation and productivity increases.

AT 381 / Apparel Machinery

Numerically controlled and computer assisted.

BIOLOGY (FOOD TECHNOLOGY)

BIO 100 / Biology

Review of general biological concepts; structures and functions of living things; chemical and biological evolution; cellular organization; life activities; metabolism; nutrition; respiration and energy utilization.

BIO 200 / Biology

An introductory course in food microbiology with emphasis on bacteriological techniques.

BUSINESS & COMMERCE

BUS 100 / Business Organization

This subject covers primarily areas of business not otherwise covered in the business administration program. Contemporary business issues are analyzed to indicate the relevance of theories and to prepare the student for the business world. The Canadian business scene is highlighted in terms of content, personalities, corporations and institutions. Students learn the generalists' multidisciplinary approach.

BUS 101 / Human Relations

An introduction to the fundamental principles of human relations; an analysis of the general nature of man as viewed from various thinkers, sciences and disciplines such as philosophy, psychology, economics, political science, theology, sociology, music, poetry, art, modern business management theories etc.; an elementary examination of such topics as: Who am I? (self-awareness) effective communications; effective listening. Students are encouraged to read, research books, periodicals, and to develop a deeper appreciation that all knowledge is potentially valuable as an insight into human relations and human behaviour.

BUSINESS COMMERCE - Cont'd

BUS 119 / Contemporary Business Issues

Canadian and international issues in the worlds of finance, economics, government, commerce and industry are discussed in seminar-style classes. Literature sources include the Financial Post, Globe and Mail Report on Business, Financial Times, Fortune, The Economist, Time and Business Week.

BUS 215 / Media Application

Students will learn how to use oral and written media in obtaining employment. Students will learn principles and techniques which can be used in on-the-job professional development. Emphasis will be on individual assignments and group activities. The course leader provides personal counselling and coaching.

BUS 307/312 / Legal, Medical & General Terminology

This course is designed to familiarize the student with the terminology likely to be encountered in the courts.

BUS 308 / Court Procedures

The purpose of this course is to familiarize the student with the duties performed by a court reporter and the manner in which a court functions.

BUS 309/310 / Current Events

A good reporter is well-read and well-informed. This course is designed to keep the student abreast of the latest development in politics, science, and the business and medical worlds.

BUS 332 / Managerial Accounting and Finance I

Application in apparel industry I & II.

CHEMISTRY

CHEM 100 / Chemistry

Semester I - Physical and chemical changes; kinetic and atomic theory; chemical bonding; reactions; equations; periodic table; solids, liquids, and solutions.

Semester II - Reaction rates; chemical equilibrium; solutbility, acids and bases; ph problems, electrochemical and nuclear chemistry; organic chemistry; experiments.

CHEM 102 / General Chemistry

Semester I - Physical and chemical changes; kinetic and atomic theory; chemical bonding, chemical reactions and equations, periodic table, solids, liquids.

Semester II - Reaction rates; chemical equilibrium; solubility; acids and bases; ph problems; oxidation and reduction; electrochemical and nuclear chemistry.

CHEM 105 / Chemistry (Graphic Arts Related)

Fundamentals of chemistry; mixtures and substance. Acids, bases; neutralization and Ph measurements; chemistry of photography and papermaking; inks and pigments; driers and additives; formation and structure of ink films; solvents and binders; plastic materials and processes; colour and colour matching.

CHEMISTRY - Cont'd

CHEM 107 / Chemistry

Physical and chemical changes; kinetic and atomic theory; valences, compounds, formulae, equations, nomenclature; reactions, periodic table, chemical bonds, molecular structure; solids, liquids, solutions, reaction rates and equilibrium; solubility, acids, bases, ph problems, organic chemistry.

CHEM 110 / Chemistry

Semester I - Introduction to chemistry. Physical and chemical changes. Kinetic theory, atomic theory, valences, compounds, formulae, equations, nomenclature, chemical reactions, the structure of the atom; the periodic table, chemical bonds and the structure of molecules; solids, liquids and solutions. Rates of equilibria; acids and bases, neutralization, ph problems, oxidation and reduction, galvanic corrosion, water hardness.

Semester II - Rates of reactions and chemical equilibrium. Fundamental laws of chemistry, solubility equilibria. Acids and bases, neutralization, ph problems, oxidation and reduction. Elementary electrochemical and nuclear chemistry. Introductory organic chemistry. Associated laboratory experiments.

CHEM 111 / Analytical Chemistry

Qualitative analysis. Determination and characterization of ions in solution. Quantitive analysis. Application of laws of stoichiometry to gravimetric and volumetric analysis. Solutions, indicators, concentration, normality, molarity, precipitation. Associated laboratory work. Instrumental analysis: Colourimetric analysis, analysis by refractive index spectrophotometry, turbidimetry, mass spectrometry, polarimetry, electroanalysis.

CHEM 113 / Organic Chemistry

Definitions, bond types, classification, structural formulae and nomenclature. Alkanes, alkenes, acetylene, alkyl halides, alcohols, ethers, aldehydes, ketones, acids, esters, optical activity, amines, aromatic hydrocarbons, aromatic nitro compounds, aromatic amines, sulphonic acids, phenols. Associated laboratory work.

CHEM 168 / Chemistry

Atomic theory; symbols; formulae; bonding; molecules and ions; acids and bases; corrosion; electroplating; precious metals, inorganic solvents; organic chemistry; strucutral formulae; applications of organic chemistry in fields of plastics and organic solvents.

CHEM 200 / Industrial Chemistry and Equipment

Unit operations: distillations, evaporation, solvent extraction, filtration, gas absorbtion, electrolytic separations and electroplating, chemical equipment involved in each operation. Specific industries: oil paints, soaps and detergents, pulp and paper, textiles, steel, plastics.

CHEM 202 / Organic Chemistry

Semester I - Organic chemistry; nomenclature, saturated and unsaturated hydrocarbons; aliphatic and aromatic compounds; alkyl and aryl halides; alcohols, phenols and ethers; organometallic compounds.

Semester II - The carbonyl group; aldehydes and ketones, atomatic substitution; carboxylic acids; derivatives of acids; aliphatic and aromatic amines and nitro compounds; diazonium compounds and simple dyes; optical isomerism; amino acids.

CHEMISTRY - Cont'd

CHEM 203 / Organic Chemistry Lab

Preparation and properties of some organic raw materials used in manufacturing resings; preparation and testing of polymers used in coatings.

CHEM 207 / Chemistry

Semester I - Organic chemistry, alkanes, alkenes, alkynes, alcohols, carboxylic acids, acid halides, anhydrides, ethers, esters, aldehydes, ketones, amines, aromatic and alipatic compounds, amino acids, proteins.

Semester II - Chemical bonding, molecular weight, molecular configurations; synthetic resins, properties of dental materials, denture base resins, polymers, gypsum products.

CHEM 210 / Polymer Chemistry

Semester I - Basic concepts of polymer science. Molecular forces and chemical bonding, functionality, molecular weight and its distribution, configurations and conformations, morphology, addition and condensation, polymerization, copolymerization. Methods for determining molecular weights of polymers. Polymerization techniques.

Semester II - Natural organic and inorganic polymers. Degradation of polymers. Properties of polymers. Rheological properties and processing of polymers. Instruments for measuring rheological properties. Newtonian and non-Newtonian fluids. Types of flow. Polymer solutions and dispersions. Solid and molten polymers. Application of polymers. Associated laboratory experiments.

CHEM 212 / Industrial Chemistry

Equipment used for grinding (dispersion) of pigments into liquid vehicles; ball and pebble mills, sand grinder, three-roll mill, high speed grinding equipment; piping and pump calculations in the paint plant; mill base letdown; dispersion behaviour and fineness of grind; film applicators.

CHEM 215 / Chemistry

Introduction to the principles of chemistry including discussions of atoms, molecules, ions, atomic and molecular weight, chemical changes, acids and bases and chemical equilibrium. A study of the chemical composition of cements and concrete.

CHEM 300 / Chemistry

This course will cover the basic composition, structure and properties of foods, as well as the chemistry of changes occurring during processing and storage.

CHEM 301 / Biochemistry

An "in viva" and "in vitro" study of the cellular chemistry. The metabolism of the carbohydrates, liquids, and proteins as well as the role of the vitamins, minerals, and water. Energy transformations, both aerobic and anaerobic will be discussed. Qualitative and quantitative biochemical analysis.

CHEMISTRY - Cont'd

CHEM 302 / Chemistry

This course will deal with the principles, methods and techniques of qualitative and quantitative, physical and chemical analysis of foods. Standard official methods will be taught employing modern analytical instrumentation.

CHILD CARE

CHI 160 / Field Practice

Field practice is an integral part of the program in affording students supervised clinical experience in a variety of settings. Field experience is considered an essential concomitant to the behavioural sciences.

CHI 161 / Human Growth and Development

The normal growth of the child is followed from birth to adolescence including phusical emotional and intellectual development. The emphasis is on the first six years of the child's life and his emotional growth during this time.

CHI 162 / Health and First Aid

A lecture-demonstration course focussed on enabling the beginning student to identify and meet the basic physical and safety needs of the children and youth in their care. A standard first aid course is included as well as simple home nursing procedures.

CHI 164 / Caring for the Disturbed Child

The purpose of this course is to arrive at a treatment philosophy. Class discussions are based on students' observations from field placement. Emphasis is placed on areas of basic care and understanding of behaviour of children and staff.

CHI 165 / Creative Activities with Children

This course will explore a variety of media through play and investigate broad areas of activities that require specific skills of the child. It is the essence of play that the experience is more important than the result. It is through the "doing" that structure actually emerges; the form of anything is latent in the process.

CHI 166 / Social Services

Legislation and institutions are studied and related to the child care field. The course includes field trips, guest speakers and class discussions.

CHI 167 / Student Group Seminar

Each week staff advisors meet with their students to discuss common concerns and explore issues raised by either faculty of students.

CHI 169 / Introductory Psychology

Readings and lectures explore some of the finding and developments in the areas of scientific method, perception, learning and motivation, emotion, personality and social psychology.

CHILD CARE - Cont'd

CHI 170 / Report Writing for Social Sciences

This course is based on the preparation of technical reports; elements of such reports; various types, methods and styles.

CHI 171 / Introductory Sociology

Readings and discussion of the basic concepts in sociology will be used in analyzing various aspects of Canadian Society in intergroup relations, rural and urban communities, social classes and social institutions.

CHI 172 / Group Process I

Purpose of the course: To introduce students to the processes of social interaction and methods of observation through research and laboratory experiments and to encourage a more appreciative awareness of individual styles and strengths in group participation.

CHI 173 / Tutorials

A series of tutorials designed to examine child care work related topics not incorporated in other courses e.g. theories of personality development; innovative therapeutic programmes.

CHI 260 / Field Practice - A continuation of CHI 160

CHI 261 / Psychopathology of Childhood

Discussions include comparison of normal and abnormal development according to the personalith theories of Freud, Erikson, descriptions and functioning of defenses and study of specific categories of disturbance (i.e. autism, schizophrenia, etc.).

CHI 262 / Caring for the Disturbed Child/Adolescent

A continuation of Caring I, emphasizing the development of treatment plans for disturbed children on an individual basis.

CHI 265 / Activities with Children (Water Safety)

A combined theory-practice course to ensure safety and some skill in working with children in and around water.

CHI 267 / Student Group Seminar - A continuation of CHI 167

CHI 268 / Treatment Philosophies

An introduction to therapeutic approaches extant in child psychiatry and the mental health field today. Major theories underlying the chosen methods of treatment are discussed.

CHI 269 / Professional Development

A discussion-seminar approach scrutinizing the specific role behaviours expected of the graduate by employers, colleagues, and other disciplines.

CHI 271 / Therapeutic Programming

Discussion of the meaning and purpose of play and fantasy and the use of such understanding for more effective communication with children.

CHILD CARE - Cont'd

CHI 270 / Group Process II

Purpose of the course: A focused study of the processes, dynamics, structures and politics most relevant to the Child Care treatment centre in its community and professional setting. To include topics of: Supervision, Internal structures, Relation to community, Lines of responsibility, etc.

CH 272 / Working with Families

This course will explore the particular concerns and problems which arise in working with parents and families. Consideration is also given to teacher-child-child care worker relationships.

CHI 274 / Independent Study

The student will identify and research an area of interest under the direction of a faculty member.

CIVIL ENGINEERING

CIV 101 / Engineering Drawing and Design

Fundamentals of structural engineering drawing, according to accepted standards and specifications.

CIV 103 / Construction Materials

Engineering testing and investigation of soils; the manufacture and use of cement and asphalt; the design and control of concrete mix; the design of asphalt mix as applied to highway construction.

CIV 104 / Specifications & Estimating

Method of measurement and take off for estimates for building and civil works of a relatively simple nature.

CIV 200 / Structural Drawing and Design

Practical introduction to basic design and drawing, as applied to modern structures in reinforced concrete and structural steel.

CIV 202 / Municipal Services

Collection and distribution of community water supply, factors and manipulations influencing run-off and disposal, pipe sizes, gradients and location of sewer types.

CIV 203 / Highway Technology

Population and traffic analysis; location, design and construction of roads; legal and engineering requirements; materials and maintenance.

CIV 204 / Specifications & Estimating

A continuation of CIV 104 but dealing with more complex structures together with specification reading and preparation of tenders and analysis of prices.

CIV 302T / Municipal Services

Zoning by-laws and regulations, planning boards and committees, studies in planning, preparation of planning reports and plans.

CONSTRUCTION

CO 100 / Building Construction

Site selection and excavation, concrete formwork design, construction equipment, power and hand tools, detailing construction elements, plan interpretation, systems and types of construction, field trips.

CO 101 / Quantity Surveying I

Method of measurement and preparation of estimates for building works for domestic, small office and industrial buildings.

CO 102 / Mechanical Installations I

Storm and sanitary drainage, plumbing layout, venting and fire protection.

CO 103 / Construction Materials

The manufacture and use of cement, steel, brick, clay, wood and other building products; the control and application of quality concrete under laboratory conditions.

CO 104 / Site Engineering

A basic course in the fundamentals of plane surveying, utilizing the various survey instruments and equipment.

CO 105 / Principles of Concrete

A detailed study of cement and its properties, concrete mix design, quality control, testing procedures and compilation of results.

CO 106 / Concrete Construction Methods I

An introduction to concrete components used in all conztruction; the mixing, transporting, placing, finishing and curing of concrete.

CO 107 / Blue Print Reading and Drafting

Fundamentals of drafting, interpretation of concrete structural drawings.

CO 200 / Building Construction

Reinforced concrete, structural steel, laminated timber and masonry construction and equipment; construction organization; architect, engineer and trades. Drawing and interpretation; field trips.

CO 201 / Quantity Surveying II

Advanced method of measurement and preparation of estimates for building works including preparation of estimate and price build-up.

CO 202 / Mechanical Installations II

A study of those elements of environmental controls, such as heating, air conditioning, electrical and plumbing design and layout within the modern building.

CO 203 / Contracts and Specifications

Contracts, contract law, standard forms, methods and applications of various scheduling systems.

CONSTRUCTION - Cont'd

CO 204 / Site Engineering

The use and application of survey instruments, setting out buildings, offsets, curves, grading and earthworks.

CO 205 / Principles of Concrete

Continuation of CO 105, further detailed study of cement and its properties.

CO 206 / Concrete Construction Methods II

Regulations and building code, construction and inspection methods, basic study in light-weight concrete, specialized concrete building components.

CO 207 / Concrete Structural Design

Theory and design of reinforced concrete structures and structural elements.

CO 208 / Mechanical and Electrical Installations

A study of those mechanical and electrical devices and installations affecting the total design of a structure, such as elevators, escalators, conveyors; fire protection, plumbing, heating, air conditioning and electrical layouts.

COATING TECHNOLOGY

COAT 100 / Basic Paint Technology

Introduction to coatings technology; formation and structure of paint films; oils, solvents; extender and white pigments; inorganic and organic colored pigments; black and metallic pigments; driers and additives; principles of formulation and coating calculations; varnish technology; emulsion paints; solvent paints; industrial paints; cellulosic and lacquer finishes; corrosion and chemical resistant finishes; special industrial coatings; dispersion and grinding; testing methods; surface preparation; application techniques. Related laboratory experiments.

COAT 200 / Coatings Technology

Plasticizers; emulsion technology; specialty coatings; colour and colour matching; film properties; interfacial phenomena; solvent-binder-pigments interaction; paint analysis; adhesion.

COAT 201 / Coatings Laboratory

Preparation, application, methods, and evaluation of various types of coatings.

COAT 202 / Thermoplastic Resins

Raw materials, manufacturing, chemistry, and properties of thermoplastic polymers and co-polymers used in coatings.

COAT 203 / Thermoset Resins

Raw materials, manufacturing, chemistry, curing and properties of thermoset polymers and co-polymers used in coatings; polyesters, alkyds, epoxies, phenolics, silicones, amino resins, urethanes, furanes.

DAY CARE WORKER

DCW 100 / Infant and Child Development

A look at development from birth to 2 years from the perspective of (1) heredity and environment; (2) growth and maturation; (3) learning, motivation and emotion; (4) language, and (5) intelligence. A discussion of relevant infant care routines and programs and the adult's role in those programs.

DCW 101 / The Infant's Physical Health and Well Being

To increase the awareness of healthful concepts specifically to working with infants and children in a day care centre. A standard first aid course is given by the Canadian Red Cross.

DCW 102 / Introductory Psychology

A brief survey course of various branches of psychology to provide the student with a basic understanding of human behaviour and some skills in applying this knowledge to day care situations.

DCW 103 / Mental Health

A seminar on the infant's personality development and the impact of the infant-adult relationship on the growth and development of the child.

DCW 104 / Principles of Day Care

The examination, through study and discussion and in conjunction with observations and the supervised field practice of current ideas and existing day care programs in meeting the developmental needs of infants and children in a variety of day care settings.

DCW 105 / Creative Expression in Childhood

This course will explore the creative process: what activates it; how it functions; how its universal aspects have implications in the modes of learning and self-expression of the growing child. Accordingly, the course will investigate play and a variety of media, through seminars and workshops.

DCW 106 / Introductory Sociology

A brief survey course to provide the students with a basic understanding of social structure and some skills in applying this knowledge to day care situations.

DCW 107 / Professional Development

This course will include concepts of professions behaviour and responsibilities to children, parents, colleagues and members of allied professions as well as the importance of responsibility for self growth within the day care field.

DCW 108 / Legislation and Community Services

A study of legislation pertinent to day care in Ontario, specifically the Day Nurseries Act as well as a brief survey of day care legislation across Canada. A survey of agencies concerned with the health and welfare of the child and the family.

DAY CARE WORKER - Cont'd

DCW 109 / Nutrition and Food Management

Basic concepts in menu planning, food purchasing, storing, and preparation are studied with relation to nutrition. The importance of managing a day care kitchen is discussed. Current concepts of feeding practices, particularly with infants, is emphasized.

DCW 110 / Special Studies

A reading seminar in English literature supported by background philosophy on man's research for identity in the 20th century.

DCW 111 / Tutorials

The class is made up of small groups headed by a staff advisor, who is also the co-ordinator between the college and the field placement, to discuss the courses in relationship to the field placement.

DCW 112 / Supervised Field Practice

Individual student supervision and evaluation is given in selected day care settings to provide an opportunity for the student to observe and to practice with infants and children in day care as well as to provide an opportunity for the student to gain necessary information for different course assignments.

DCW 200 / Human Growth and Development

A study of the process in which an infant grows and develops into a mature human being - the nature of the relationship between the child and society - the stages of development to maturity from a variety of theoretical and practical viewpoints.

DCW 201 / Children With Special Needs

An examination of etiology and treatment concepts related to children with special needs: physical, psychological and sociological.

DCW 202 / Cognitive Development

Aim: To develop a theoretical framework for examining how learning occurs. The student will be required to research and generate a program within an area of individual interest such as science drama, etc.

DCW 204 / Varieties of Day Care

A survey of various day care programs reflecting different philosophies in day care accompanied by field trips where possible.

DCW 205 / Planning and Management of Day Care Facilities

A study of the resources and skills needed in setting up and managing a day care centre, starting with legal requirements, initial stages of planning and developing programs and progressing to final stages of financing, accounting and managing a day care operation.

DCW 206 / Family Dynamics

A study of the various interactions in families and the facts and issues which influence them and a practical application of this knowledge to actual day care family situations.

DAY CARE WORKER - Cont'd

DCW 207 / Parent Interviewing, Counselling and Education

A survey of parent education theories with opportunities to practice techniques of interviewing, counselling, group education and community organization.

DCW 208 / Group Process

A study of group dynamics with opportunities to develop skills in leading groups or affecting group processes.

DCW 210 / Tutorials

The class is made up of small groups headed by a staff advisor, who is also the co-ordinator between the college and the field placement, to discuss the courses in relationship to the field placement.

DCW 211 / Supervised Field Practice

Individual student supervision and evaluation is given in selected day care settings to provide an opportunity for the student to observe and to practice with infants and children in day care, as well as to provide an opportunity for the student to gain necessary information for different course assignments.

DENTAL PROGRAMS

DENT 100 / Dental Laboratory & Lectures I

The practical laboratory procedures of the dental technician program enable the student to develop all the techniques involved in present day dental technology; these practical exercises are extended over the entire three-year program and account for 80% of the complete course; combined with the practical prodedures are the theoretical principles and fundamentals involved.

DENT 101 / Dental Materials

This course makes a detailed study of the composition and physical properties of impression materials; rigid, plastic and elastic; the manipulation of impression materials; properties and composition of gypsum products, namely acrylic resins, dental waxes; composition of dental porcelain, building and firing.

DENT 102 / Dental Anatomy

This course consists of a series of lectures dealing with the basic and fundamental anatomy of teeth and related structures. Since a satisfactory end result is imperative in all types of dental restoration, the technician must have an intimate knowledge of outline form and occlusion, and be able to reproduce this in an art form unlike any other.

DENT 103 / Science of Dental Materials 107

A study of materials used in dental work from the standpoint of their physical properties. Compressive and tensile strengths. Properties of colloids. Dental waxes and their properties.

DENTAL PROGRAMS - Cont'd

DENT 104 / Basic Health Science

This subject taught in the first semester concentrates on the cell and primary tissues, integumentary system, musculoskeletal system, nervous system, circulatory system, respiratory system, digestive system, genito-urinary system, reproductive system, endocrine system, and special senses. Emphasis is placed on microbiology.

DENT 105 / Dental Laboratory

The practical laboratory procedures of this course provide the student with a sound basis to enable him to develop all the techniques involved in present day dental technology and include: identification of equipment, application of safety regulations, tooth sketching, tooth carving, models, base plates, occlusal rims, custom impression trays and pinning and puring stone dies.

DENT 106 / Dental Materials

This course makes a detailed study of the composition and physical properties of impression materials: rigid, plastic, and elastic. The manipulation of impression materials. Properties and composition of gypsum products, acrylic resins, dental waxes. Composition of dental porcelain, building and firing.

DENT 107 / Dental Assisting

Emphasis is placed on the four-handed concept and team approach to dental assisting. The students are trained in dental office procedures, supplies, film processing, patient education, first aid, identification and care of instruments and equipment, chairside procedures and instruments exchange.

DENT 108 / Professional Development

Students are trained in professional decorum, good grooming and conduct befitting young professional women. Upon graduation, it is expected that students will conduct themselves professionally and function efficiently as competent dental auxiliaries.

DENT 109 / Dental Radiology

The graduate will know the properties and equipment, protective regulations and measures, as applicable to dentistry; he will be able to produce and process diagnostic dentay x-rays, applying the bisecting angle or the right angle paralleling technique, as directed by a dentist.

DENT 110 / Oral Hygiene

Emphasis is placed on prevention and the students are instructed in patient education, oral hygiene procedures, brushing techniques, dental flossing, stimulation and home care.

DENT 111 / Clinical Practice

Under the supervision of highly qualified participating dentists, the students will spend one week at the Faculty of Dentistry, University of Toronto. In the clinical environment at the Faculty of Dentistry, the students will assist undergraduate dental students with routine dental procedures. Furthermore, the students will be assigned to private dental practices for one week. Under the supervision of qualified dental practitioners, the students will observe and participate in the clinical procedures, reception of patients, administration, correspondence, accounting and clerical duties performed in a dental office.

DENTAL PROGRAMS - Cont'd

DENT 200 / Dental Laboratory & Lectures II

A continuation of Dental Laboratory & Lectures I.

DENT 300 / Dental Laboratory & Lectures III

A continuation of Dental Laboratory & Lectures II.

DESIGN (JEWELLERY)

DES 169 / Elementary Arts

Theories of line; layout; design, lettering (styles); transferring designs to metal, etc.

DES 269 / Principles of Jewellery Design

Engraving; intermediate level to DES 169.

DES 369 / Advanced Jewellery

Engraving designs.

DICTAPHONE

DIC 105 / Dictaphone

This is a short course to familiarize the secretarial student with the use of transcribing equipment, whether the dictaphone be on belts, tapes or discs.

DIC 200/201 / Medical Dictaphone

Initially transcription will be from professionally dictated tapes, belts and discs, including material such as operative notes, final summaries, case histories, etc., covering areas such as neurology, internal medicine, orthopedics, etc. In the last semester, emphasis is on intensive production of actual hospital dictation in addition to on-the-job training in a downtown hospital.

DRAFTING

DR 102 / Architectural Drafting I

Preparation of working drawings of plans, sections, elevations and details of frame and masonry construction; perspective drawings; rendering and model making.

DRESSMAKING

DRES 141 / Elementary Dressmaking Using Commercial Patterns.

Projects: shifts of jumpers, skirts (wool), and/or blouses (cotton). Measurements, relationship of pattern, style and fabric; laying out patterns; sewing techniques (hand and domestic machine).

DRES 142 / Fabrics I

Study of textiles for beginners; structure and fibres (man made and natural).

DRESSMAKING - Cont'd

DRES 146 / Tailoring I

Ladies' tailoring, sewing, cutting techniques; finishing coats and suits using commercial techniques.

DRES 151 / Advanced Sewing Techniques

Construction layout, cutting, finishes. Making samples. Projects: detailed dresses, skirts and weskits (lined) and gowns. Emphasis on fitting, hand finishes and detail. Application of trims, bound button-holes, pockets, zippers, etc.

DRES 152 / Fabrics II (Intermediate Level)

Construction of cloth; various weaves and finishes (synthetic and natural fibres).

DRES 156 / Tailoring II (Intermediate Level) following DRES 146.

Projects: wool coat or cape; suit jacket and skirt, etc.

DRES 241 / Dress Construction

Most efficient ways of cutting and seaming garments and assembling parts to form clothing. Efficient use of fabric to minimize waste.

DRES 242 / Fabrics III (Advanced Level)

Project: fabric book (samples and examples of best use) - co-ordinate colors and textures; knits, trims, braids, etc.

DRES 244 / Alterations and Fitting (Advanced)

Pattern changes before construction to eliminate fitting problems.

DRES 246 / Tailoring III (Advanced Level)

Special finishes: buttons, belts, etc. Working with fur fabrics and fur trims.

DRES 247 / Apparel Construction

Sample-making for the professional apparel plant.

DRES 248 / Varieties of "Findings"

Trims, zippers, supplies, etc., and the optimum methods of efficient purchasing and stocking of them.

DRES 249 / Dress Store Workroom

Case studies of workroom problems.

DRES 251 / Couture Construction Technology (Advanced)

Engineering shortcuts to accomplish more work in less time.

DRES 252 / Fabrics

Knits, trims, and braids.

DRES 254 / Advanced Alterations and Fittings

Pattern changes before construction to eliminate fitting problems.

DRESSMAKING - Cont'd

DRES 256 / Tailoring IV

Commercial approach to finishing and substitutes for hand operations.

DRES 258 / Continuation of DRES 248

Buying materials and supplies; problem solving.

DRES 261 / Apparel Construction (Advanced)

"Engineering" shortcuts to accomplish more work in less time.

DRES 341 / Apparel Projection

Techniques useful for predicting style changes; the relationships between fashion and human psychology; economic and political factors affecting dress.

ECONOMICS

EC 100 / Economics

Semester I - Forms of economic and business organization, supply and demand, money and banking, personal finance, international trade, business cycle, investment, insurance, uses and sources of credit, taxation; money, credit and banking.

Semester II - Cost analysis, human relations, sales, government law regulations, social services, classified financial statements, basic bookkeeping practices, proven promotion methods, advertising.

EC 112 / Business Organization

Forms of business ownership. Personnel. Labour unions and forms of agreements. Production planning and control. Organization of a plastics manufacturing plant.

EC 113 / Business Organization

Maintenance of records; charts; files; cost accounting, receivable and payable. Inventory, stock, supplies, materials, receipts. Budget, expansion and growth.

EC 132 / Small Business Management

Business Mathematics; basic bookkeeping: journals, ledgers, financial statements, entries, special journals. Business organization; business law; sales and advertising.

EC 175 / The Economics of the Canadian Apparel Industry

Financian and banking - Sec. 88 of the Bank Act - Capital, etc.

EC 176 / Government Programs

Municipal, county, provincial and federal aids and programs for industry in general and the Apparel Industry in particular; foreign markets.

ECONOMICS - Cont'd

EC 210 / Economics I

Basic economics and industrial organizations: forms of economic organization and their strengths and weaknesses. Monetary theory: money, credit and banking, Canadian banking system. Forms of business organization and business financing.

EC 212 / Business Organization

Administrative and office services. Auto data processing. Short, medium and long term financing and functions and methods of marketing. Sales and sales promotion activities.

EDUCATION

ED 100 / Fundamentals of Supervision and Instruction Techniques

Theory and case problems of supervision. An analysis of teaching techniques. Practical teaching with emphasis on personality presentation.

ELECTRONIC DATA PROCESSING

EDP 100 / Introduction to E.D.P.

This course provides an overview of business data processing which will prepare the participant for further study in the areas of programming and systems analysis. Topics include hardware and software features, programming languages, algorithms, flowcharts, and programming experience using out time-sharing computer.

EDP 101 / COBOL I

Language mechanics of COBOL are introduced and students gain practical experience by writing programs to solve business type problems. Emphasis is placed on documentation of programs.

EDP 102 / Business Applications

This course examines the inter-relationships among business procedures. The flow of data within an organization and computer applications. Participants are encouraged to write programs which involve applications in Accounting, Marketing, Inventory Control, etc.

EDP 175 / Mathematics to Prepare for Computer Uses in Apparel Field

Basics - Semester I - point of sale machines, e.g. cash register, etc.

EDP 200 / Advanced COBOL

Applications such as accounts receivable and payroll are the subject of programming assignments. Techniques include sorting, summarizing, master file update.

EDP 201 / IBM/370 Assembler I

This course introduces IBM/370 architecture and discusses in detail the components of the IBM/370 series of computers. Topics include hardware and software features while emphasizing programming in Assembler Language.

ELECTRONIC DATA PROCESSING - Cont'd

EDP 202 / Systems Analysis I

This introductory course in Systems Analysis examines the role of the systems analyst within an organization. Case studies and class problems encourage participants to develop skills and to utilize techniques associated with the systems function.

EDP 204 / Advanced Programming

Applications requiring several interactive programs and involving the use of direct access storage are designed by the class. Individually, students write the necessary programs to install and maintain the applications. COBOL is the primary language, however, techniques for insertion of segments in other languages are introduced.

EDP 205 / IBM/370 Assembler II

This advanced course in programming the IBM/370 series of computers focuses on many of the powerful features of Assembler Language. Case studies and comprehensive problems encourage programming proficiency while extending the programmer's knowledge of applications.

EDP 206 / Systems Analysis II

This advanced course in Systems Analysis involved active participation in problem investigation and encourages analytical examination of facts prior to the presentation of a proposed solution.

ELECTRICAL TECHNOLOGY

EL 106 / Electrical Fundamentals

Ohm's law, D.C. circuits, power dissopation, magnetism and electromagnetism, inductance, capacitance, alternating currents, inductive and capacitive reactance, impedance, A.C. circuits, power dissipation and A.C. circuits.

EL 111 / Electrical Fundamentals

Ohm's law; series and parallel DC circuits; series-parallel or combination DC circuits; power in DC circuits; resistivity; wire calculations; resistance change with temperature; magnetism and electromagnetism; magnetic circuits; inductance; transients in inductive circuits; capacitance; transients in capacitive circuits; design of DC ammeters, voltmeters, and ohmmeters; DC networks.

EL 112 / Electrical Machine Fundamentals

Construction and operation of "ideal" single-phase transformers; three-phase banks; construction and operation of three-phase transformers; construction and operation of single-phase motors, three-phase induction motors and three-phase synchronous motors; AC motor application.

EL 113 Electronic Fundamentals

Construction and operation of vacuum-tube diodes, triodes, tetrodes, and pentodes; vacuum-tube amplifiers and switches; construction and operation of semiconductor diodes and transistors; transistor amplifiers and switches.

ELECTRICAL TECHNOLOGY - Cont'd

EL 114 / Electrical Drafting I

Lettering; use of instruments; linework; metric and inch scales; orthographic projection; isometric projection; sketching; electrical and electronic schematic symbols, simple motor control schematics; two-and three-wire control.

EL 115 / Applied Circuit Analysis I

A tutorial in solving simple passive D.C. and A.C. circuits using the slide rule, and using basic algebraic and trigonometric manipulations in their solution. An introduction to time constants, and to circuits requiring solutions by quadratic equations.

EL 121 and 121T / Direct-current Machines

Construction and operation of separately-excited, shunt, series, and compound generators; armature windings; equalizer windings; commutation; three-wire generators; Dynamotors; series boosters; Amplidynes; Rototrols; Regulex Generators; Ward-Leonard system; construction and operation of shunt, series, and compound motors; braking; maintenance of DC machines.

EL 122, and 122T / Electrical Circuits

Construction and operation of a basic AC generator; sinusoidal voltage and current equations; instantaneous, average, and effective values; inductive and capacitive reactance; impedance; series circuits; parallel circuits; power, reactive power, and apparent power in single-phase circuits; phasor diagrams; complex circuits; networks; resonance; voltage, current, and power in balanced three-phase systems; AC instruments.

EL 123 and 123T / Electrical Drafting II

Three-phase motor control circuits; induction motor control & schematic, part-winding motor control & schematic; synchronous motor control schematic; reduced voltage starting circuits; forward-reverse control; point-to-point and highway type wiring diagrams; conversion from wiring diagram to schematic diagram; DC motor control schematics.

EL 124 and 124T / Applied Circuit Analysis II

A tutorial in D.C. and A.C. passive network analysis requiring solutions by complex algebra and determinants.

EL 125 / Electrical Environmental Systems

Basic concepts of electrical heating and air conditioning as applied to the environment and calculations for electrical power loads. Principles of illumination and calculations related to electrical power loads; acoustics and methods of controlling sound in the environment and calculations of electric power loads.

EL 126 and 126T / Electrical Control Systems

Construction and operation of DC relays and contactors; construction and operation of manual DC starters; DC magnetic starters; operation of simple DC motor-control circuits; construction and operation of AC relays and contactors; operation of AC magnetic starters; operation of simple AC motor-control circuits; introduction to static-control equipment.

ELECTRICAL TECHNOLOGY - Cont'd

EL 130 / Electrical Fundamentals

Electrical and electron theory, laws and applications, symbols and schematics, circuits, wiring practices, motors, transformers, test equipment and analysis, vacuum tubes and transistors.

EL 200 / Electrical Fundamentals

Ohm's Law, D.C. circuits, power dissipation, magnetism, electromagnetism, A.C. circuits, A.C. power dissipation, inductance, capacitance, impedance, D.C. & A.C. machines, transformers, relays and switching. Welding machine trouble-shooting and repair.

EL 232T / Alternating Current Machines

Transformer principles; construction of single-phase and three-phase transformers; standard transformer tests; impedance and voltage regulation; parallel operation; transformer connections; construction of alternators; stator windings; rotor windings; impedance; voltage regulation; alternator test and regulation calculations; armature reaction; parallelling; operation of synchronous motors; phasor diagrams; power-factor control; supersynchronous motors; synchronous induction motor; construction of three-phase induction motors; operation of induction motors; starting torque and current; breakdown torque; construction and operation of single-phase induction motors; split-phase starting; shaded pole motors; repulsion motor; single-phase synchronous motors; maintenance of AC apparatus.

EL 233T / Blue Print Reading

Architectural symbols and conventions; mechanical symbols; electrical wiring symbols; interpretation of electrical drawings showing commercial and industrial installations; reading of ladder diagrams; conversion from wiring to elementary diagram.

EL 234 and 234T / Electrical Distribution Systems

Review of AC fundamentals; review of balanced three-phase systems; unbalanced three-phase four-wire Wye-connected loads; unbalanced Delta-connected loads; unbalanced three-wire Wye-connected loads; combination unbalanced loads; phasor diagrams; two-watt meter method of measuring power; meter switching circuits; electrical systems; overhead and underground distribution systems; types of distribution systems; system regulation; voltage regulators; lightning arresters; circuit breakers; street-lighting system.

EL 235 and 235T / Industrial Electronic Fundamentals

Review of the operation of vacuum tubes and semiconductor diodes and transistors; Zener, Avalanche, and Esaki diodes; field-effect transistors and Unijunction transistors; four-layer diodes; photoelectric devices; saturable reactors and magnetic amplifiers; gas diodes, ignitrons, and thryatrons; logic devices.

ELECTRICAL TECHNOLOGY - Cont'd

EL 236 and 236T / Protection of Electrical Equipment

Malfunctions of single-phase transformers; fuses; circuit breakers; types of protective relays; relay protection of single-phase transformers; malfunctions of three-phase transformers; relay protection of three-phase transformers; malfunctions of induction motors; H.E.P.C. code on motors; protection of induction motors; co-ordination of protection; relaying zones.

EL 237 and 237T / Electrical Drafting III

Development of control schematics for complex motor control systems involving interlocking, sequence control, forward-reverse control and multispeed starting; including wiring diagrams and electrical layout drawings; motor control center design.

EL 241 / Industrial Electronic Control Systems

Timing circuits; electronic timers; photoelectric relays; light-sensing relays; temperature-sensing relays and temperature recorders; voltage regulators; voltage-sensing relays; motor-speed controllers; position controllers; power rectifiers; resistance welders; electronic heaters; electronic instruments; logic devices; synchros, static stability of servomechanisms.

EL 242 / Electrical Apparatus

Transformer principles; construction of single-phase and three-phase transformers; standard transformer tests; impedance and voltage regulation; parallel operation; transformer connections; construction of alternators; stator windings; rotor windings; impedance; voltage regulation; alternator test and regulation calculations; armature reaction; paralleling; operation of synchronous motors; phasor diagrams; power-factor control; supersynchronous motors; synchronous induction motor; construction of three-phase induction motors; operation of induction motors; starting torque and current; breakdown torque; construction and operation of single-phase induction motors; split-phase starting; shaded-pole motors; repulsion motor; single-phase synchronous motors; maintenance of AC apparatus.

EL 243 and 243T / Electrical Drafting IV

Transformer substation design; grounding arrangement, electrical arrangement, single-and three-line diagram and preparation of a complete bill of material for the substation; relay and control panel layouts and wiring diagrams.

EL 244 / Wiring Methods & Electrical Code

Wiring materials including conduit non-metallic sheet cable, armoured cable, mineral insulated cables, aluminum sheet cables, bussways, wireways, services, residential, commercial, and industrial; devices; fixtures; motors; electrical safety code applications.

EL 245 and 245T / Introduction to Computer Programming

Fundamental concepts of programming; "BASIC" as a programming language; arithmetic functions, loops, conditional and unconditional branching; use of the TIME-SHARING System with remote terminals; preparation of flowcharts and simple problem solving programs.

ELECTRICAL TECHNOLOGY - Cont'd

EL 247 / Electrical Design Applications

Layout of switchboards. distribution systems, low voltage signal systems and electrical heating systems. Calculations for lighting layouts and heat loss factors. Meters, mechanical design of related electrical equipment and transmission towers. Electronic chassis layouts and printed circuits. Complete design drawings for electrical installations for residential, commercial and industrial projects.

EL 248 / Architectural and Mechanical Blueprint Reading and Drafting

Architectural, structural and mechanical symbols and conventions. Preparation of working drawings for architectural plans, sections, elevations. Preparation of mechanical working drawings for heating, ventilating, air-conditioning, plumbing and piping systems.

EL 249 / Electrical Specification Writing

Basic concepts of specification writing. Legal use and interpretation of English. Reading working drawings. Legal position of contractor, engineer, architect and client. The legal importance of electrical drawings and relationship to the specification. The importance of electrical codes and approvals. Details of the sections of an electrical specification. Practice in writing a short electrical specification using a completed set of electrical, architectural and mechanical drawings. Specification office procedure.

EL 305 / Machine Circuits and Apparatus

Basic fundamentals of D.C. and A.C. circuits, electromechanical control of A.C. and D.C. motors, trouble shooting electromechanical systems with instruments. Thorough understanding of pertinent wiring and schematic diagrams.

EL 353 and 353T / Electrical Drafting IV

Transformer substation design: grounding arrangements, electrical arrangements, single-and three-line diagram and preparation of a complete bill of material for substation; relay and control panel, layouts, and wiring diagrams.

EL 351 / Industrial Electronic Control Systems

Timing circuits; electronic timers; photoelectric relays; light-sensing relays; temperature-sensing relays and temperature recorders; voltage regulators; voltage-sensing relays; motor-speed controllers; position controllers; power rectifiers; resistance welders; electronic heaters; electronic instruments; logic devices; synchros, static stability of servomechanisms.

EL 352 / Electrical Environmental Systems

Basic concepts of electrical heating and air conditioning as applied to the environment and calculations for electrical power loads. Principles of illumination and calculations related to electrical power loads; acoustics and methods of controlling sound in the environment and calculations of electric power loads.

ELECTRICAL TECHNOLOGY - Cont'd

EL 362 / Electronic Instruments

Instrument errors; statistical analysis of results; standards of measurement; DC indicating instruments; loading effects; potentiometers; DC bridges; AC bridges; oscilloscopes; applications of oscilloscopes; electronic analog instruments; digital instruments; signal generators; waveform analyzers; time and frequency measurement; transducers.

EL 363 / Servo Controls

Feedback principles, notation and definitions, transform theory; feedback diagrams, nyquist, stability, bode, etc.; servos, syncros, servo amp., Ward Leonard system; application, transducers, photoelectric controls, induction and dielectric heating, motor controls, chemical controls.

EL 364 / Machine Design

General design procedure; design of single-phase and three-phase transformers; design of polyphase induction motors; design of synchronous machines; design of single-phase motors; design of DC machines.

EL 365 / Electrical Estimating

Analysis of electrical drawings, take off procedures, pricing, labour costs, adjustments for working conditions and non-productive costs; incidental and direct job costs including electrical heating. Analysis of specifications.

ELECTRONIC TECHNOLOGY

ELTC 100 / Electronic Fundamentals I

An introductory course: Active devices; vacuum tubes; Semiconductors; Tube and Semiconductor comparison.

ELTC 101 / Electrical Fundamentals Advanced

Combination D.C. resistive circuits; power and energy; Application of theorems; Magnetism; Inductance in D.C. applications; Capacitance in D.C. applications; Alternating Current; Inductance in A.C. applications, Capacitance in A.C. applications; Principles of L-C-R circuits; Power in A.C. circuits, transformers,; Multiphase A.C. systems.

ELTC 102 / Electronic Fundamentals Advanced

Networks; L-C-R circuits, impedance, Applications of theorems; Resonant circuits; Filters; Power supplies.

ELTC 102T / Electronic Fundamentals Advanced

Same as ELTC 102 but taught using more mathematical models.

ELTC 103 / Amplifiers and Devices

Vacuum tubes; Semiconductors; C.E. analysis, C.B. analysis, C.C. analysis cascade amplifiers, frequency response, distortion, power amplifiers; Semiconductor devices, F.E.T., Unijunction transistor, S.C.R., traic, intergrated circuits, operational amplifiers, Oscillators; Armstrong, Hartley, Colpits.

ELECTRONIC TECHNOLOGY - Cont'd

ELTC 103T / Amplifiers and Devices

Same as ELTC 103 but taught using more mathematical models.

ELTC 104 / Advanced Transistor

h parameters in two port networks; h parameters in active two port networks; C.E. circuits, C.C. circuits, biasing and stability; configuration comparisons; transistor ratings; quantitative analysis of cascade amplifier; large signal applications, power amplifiers, class A, class B, class AB, integrated circuits; semiconductor devices, analysis of F.E.T., unijunction.

ELTC 105 / T.V. Principles

Basic transmitting principles; receiver (black and white), typical waveform and voltages, fault finding procedures; tuners, I.F.'s, video amplifiers, sync separators, vertical and horizontal oscillators, horizontal output stage, picture tubes, sound circuitry; receivers (color), color principles, basic circuits.

ELTC 106 / Electrical Fundamentals I

An introductory course: Atom theory, current flow; Potential difference; Resistance; Ohm's law; Resistive circuits; Batteries; Power.

ELTC 107 / Electrical Fundamentals II

An introductory course: Magnetism, permanent magnet, Induced voltage, electro-magnetism; A.C. generator; A.C. motors; Transformers.

ELTC 108 / AM/FM Receivers

Principles of carrier transmissions; Amplitude modulation; properties, receivers; Frequency modulation; properties, receivers; FM stereo multiplex.

ELTC 109 / Electronic Drafting

Production of printed circuit layouts, artwork and printed circuit boards for electronic projects, theory and design of integrated circuits and production of integrated circuit layouts. Development of electro-mechanical drawings for mechanical components of electronic equipment. Free hand sketching. Architectural, mechanical and electrical blueprint readings.

ELTC 111A / Applied Circuit Analysis I

A tutorial in solving simple passive D.C. and A.C. circuits using the slide rule, and using basic algebraic and trigonometric manipulations in their solution. An introduction to time constants, and to circuits requiring solutions by quadratic equations.

ELTC 111B / Applied Circuit Analysis II

A tutorial in D.C. and A.C. passive network analysis requiring solutions by complex algebra and determinants.

ELTC 111T / Applied Circuit Analysis

Same as ELTC 111 but taught using technology mathematics.

ELECTRONIC TECHNOLOGY - Cont'd

ELTC 112A / Laboratory

Laboratory exercise to reinforce basic principles plus building and testing a motivation project.

ELTC 112B / Laboratory

Laboratory exercises to reinforce theory lessons plus building and testing student chosen project based on published information. Project built on printed circuit board.

ELTC 115 / Electronics for Watchmakers

Dichotomy of electronic watches; Electron theory; Ohm's law; Color code; Series and parallel resistors; Batteries; Magnetism; Electromagnetism; Capacitance; L-C circuits; Quartz crystals; Diodes, Transistors; F.E.T's Liquid crystal circuits as used in watch design; modules and I.C. circuits

ELTC 120 / Electronic Drafting Fundamentals

Use of instruments, lettering and line work, electronic symbols and use in schematic diagrams, development and production of point-to-point, highway, airline and wiring diagrams. Description of cable forms, wiring harnesses and locking devices, theory and layout of printed circuits and production of printed circuit boards from layouts and artwork, linear and polar graphs, vertical and horizontal bar charts. Use of logarithmic paper.

ELTC 200 / AM/FM Technology

Types of modulation, amplitude modulation, properties, mathmatical development; Frequency modulation, properties, mathematical development, Bessel curves and tables; Receiver circuits, mixers, oscillators, detectors, tuned amplifiers, single, double and cascade amplifiers.

ELTC 201 / Wave Shaping and Control Devices

Non-sinusoidal waveforms, harmonic analysis, transient and steady state conditions, wave shaping circuits; Switching characteristics; Multivibrators; Control devices, unijunction transistor, S.C.R., traic, S.C.S.

ELTC 203 / Computer Aided Instruction - Same as ELTC 203 T

ELTC 203T / Computer Aided Instruction

Basic fortran programming; Electronic circuit analysis program; PDP8 langua

ELTC 204 / Solid State Design

Small signal design and analysis of differential amplifiers; Feedback amplifiers gain, bandwidth, and distortion considerations; Nyquist and bode plot analysis of frequency response; Operational amplifier parameters; Analog and digital applications of operational amplifiers.

ELECTRONIC TECHNOLOGY - Cont'd

ELTC 205 / Communication Technology I

Communication systems; Noise, definitions, calculations, noise expre-sions; Oscillators, crystals, crystal oscillators; Amplitude Modulation; Modulating with complex waveforms, A.M. transmitter, class B & C signal analysis (Fourier): Types of modulation grid, plate, base, collector, measurements, antenna matching; R. F. power amplifiers class A, B_1, B_2, C_1, C_2; A.M. communication receivers, requirements, R. F. amplifier, converter, I. F. amplifier - variable bandpass, detectors; Single side band, signal analysis, transmitter, receiver; Frequency modulation; signal analysis of direct, indirect F.M., phase modulation, modulating methods, transmitters, noise.

ELTC 207 / Advanced Semi-Conductor Devices

h parameters in two port networks; h parameters in acrive two port networks, C.E. circuits, C.B. circuits, C.C. circuits, biasing and stability; configuration comparisons; transistor ratings; quantitative analysis of cascade amplifier; large signal applications, power amplifiers, class A, class B, class AB; integrated circuits; semiconductor devices, analysis of F.E.T., unijunction, S.C.R., traic, S.C.S.

ELTC 208 / Pulse Circuits

ion-sinusodial waveforms, harmonic analysis, time constants, transient and steady state conditions, wave shaping circuits, applications; switching characteristics, wave shape definitions, switching with active devices; waveform generating circuits and applications, multivibrators, astable, monostable, bistable (discrete and op. amp. circuits); triggering and steering; Schmitt Trigger; other generators, sawtooth, trapezodial, blocking oscillators.

ELTC 209A and 209B / Laboratory

In each course and each area of specialization, laboratory periods will be given. The laboratory exercises have been developed so that they will reinforce the materials given in theory. Also, the laboratory exercises emphasize measuring techniques and principles. Because of the ultimate goal in Engineering Technician training, "hands on" laboratory training is considered essential and, therefore, this phase of the course is considered to be a major area of study.

ELTC 210 / Digital Principles

Digital arithmetic and coding; basic logic circuits and Nor, Or, Nand, exclusive or, flip-flops, R-S, clocked R-S, D-P type, J-K; Boolean algebra, truth tables, Venn diagrams, Karnaugh maps, deviation of logic equations, practical applications; Register circuits, storage, shift, information transfer, counters; Adders and Subtractors; Basic computer system.

ELTC 211 / Audio Principles

Acoustic fundamentals; Elements of audio systems; basic layouts, audio transmission, attenuators and mixers; Ultrasonic and audio transducers, microphone, loudspeakers, magnetic heads, optical, sound, measurement; Audio transport mechanisms; Principles of the Dolby systems; Dubbing and editing principles.

ELECTRONIC TECHNOLOGY - Cont'd

ELTC 212 / Video Principles

Light characteristics; Lens characteristics; Lens types; Color principles and vision; Light spectra energy conversion; Heat sensitive devices and controls.

ELTC 213 / Communication Principles

Amplifiers, miller effect, negative feedback, linear amplifiers, varactor multipliers; R.C. phase shift oscillator, crystal oscillator, crystal ovens and stability calculations; amaplitude modulations; AM transmitters; AM receivers; single sideband; fequency modulation; direct FM transmitters; phase modulation; FM receivers.

ELTC 214 / Electrical and Electronic Theory and Practical Applications for Graphic Arts Printing Technicians

Printing and printing preparation equipment; circuitry and controls to the extent required for fault finding and routine maintenance.

ELTC 215 / Communication Systems

Transmission line parameters, types and impedance matching problems; WG parameters, hardward and smith chart applications; microwave devices - active and passive (klystrons, magnetrons, TWT, bulk effect devices, lasers). Basic radar and typical application; multiplex theory and frequency division systems, applications; Antenna theory.

ELTC 216 / Computer Systems

Computer memories; Magnetic core, solid state, thin film; Machine language programming; Peripheral equipment; teleprinters, high speed printers, drum and disk storage units, magnetic tape storage units, card and tape readers, card and tape punchers, numerical displays, graphical displays; Analog/Digital conversion techniques; DC electronic analog computers.

ELTC 217 / Electronic Laboratory for Acoustics

This course will consist of projects and exercises related to equipment studied in ELTC 218. See ELTC 209A and 209B for department philosophy regarding laboratories.

ELTC 218 / Electronic Instrumentation for Acoustics

Investigation of the principles, applications and limitations of complex electronic instruments, wave analyzers, frequency meters, broad band pulsed sweep oscillators, digital display instruments, recorders and other modern electronic instruments.

ELTC 219 / ETV/TV Broadcast Systems

Video systems and transmitting systems; Sync generator, pulse distribution, NTSC generator signal, vectorscope, video amplifiers and switches, vertical interva test signal techniques, transmitter analysis and standards, basic CATV system; TV cameras; color and monochrome cameras, image conversion, color and monochrome cameras chain functions, matrixing devices; Tape recorders, video tape systems, wideband recording, rotating head principles; Telecine theory, film techniques, dubbing systems, telecine chains, film recording of video signals.

ELECTRONIC TECHNOLOGY - Cont'd

ELTC 300 / Pulse Technology

Fourier analysis of repetitive waveforms; Analysis of high pass C-R networks; Analysis of low pass C-R networks; Analysis of L-R networks: Analysis of L-C-R networks; Pulse transformers, ideal and practical; Pulse delay lines, parameters, characteristic, response to pulse.

ELTC 301 / Communication Technology II

Transmission line parameters, propagation constants, high frequency considerations and smith chart design; RF amplifier design using h, y and s parameters; microwave active and passive component theory and applications; multiplexing of data signals, frequency and time division theory and design considerations.

ELTC 302 / Computer Technology

Primary memory circuits, general requirements, and types, magnetic core storage, thin film memory, solid state memory; Central Processing units, operation of basic CPU, addressing schemes, other CPU structures - one address, two accumulator, two address no accumulator, stack memory; Timing and control circuits, bus structures, ROM, input and output control; Peripherals, types of communication, peripheral devices - magnetic drum, disc, tape; Input output devices, keyboard/printer, high speed printers, card reader/punch, paper tape reader/punch; CRT displays; analog computers, building blocks, analog computing components - percision potentiometers, operational amplifiers, multipliers, function generators, monitors, problem solving; Analog/digital conversion; computer control of industrial processes.

ELTC 303 / Automatic Control Systems

Feedback principles, notation and definitions, transform theory; Feedback diagrams, nyquist, stability, bode, etc.; Servos, syncros, servo amp., ward leonard system; Application, transducers, photoelectric controls, induction and dielectric heating, motor controls, chemical controls.

ELTC 304A and 304 B / System Design Principles

Introduction, systems, sub systems, modules, contractual and non-contractual requirements; Design requirements, sub systems made by the same contractor, sub systems made by different contractors; Cost, maintenance compatibility, spaces requirements, warranty, delivery; Case study; Project selection.

ELTC 305 / Electronic Mechanical Design Principles

Packaging principles; Materials and finishes; Machine shop; Fastners; Tools; Layout; Chassis design, cost.

ELTC 306 / Component Technology

Purpose of course, cost, reliability, environments, standards; Components, physics and construction, definitions and ratings, electrical and mechanical limitations, environmental effects, tests, resistors, capacitors, relays, transformers, inductors, fuses, circuit breakers, batteries.

ENAMELLING

ENA 170 / Enamelling

Elementary theory and practice - applying enamel to metals.

ENA 270 / Enamelling

Advanced theory and practice - applications in Jewellery.

ENGINEERING DRAFTING

ENDR 100 / Mechanical Drafting

The use of drawing instruments involving geometrical constructions and conventional drafting practices; multi-view drawings, involving principle and auxiliary views; selection of views; scale and size of drawing paper; freehand sketching and dimensioning; drawing of castings and the use of sectional views; dimensioning techniques and common matching notes for drawings; surface finishes, a study of contemporary manufacturing prints; ink techniques and lettering devices; graphs and charts; pictorial forms of drawing and dimensioning.

ENDR 102 / Machine Drawing and Design

Selection of principal views using third angle orthographic projection drawing system. Sectional and auxiliary views. Graphs and charts. Axonometric drawing systems and dimensioning. Conventional drawing practices. Drawing office standards. Dimensioning methods and systems. Preparation of detail working drawings involving tolerances, limits, machine fits and finishes. Machine details such as fasteners, keys, springs, taper pins, and their purposes, selection, and applications. Thread systems; terminology, representation, specifications, standards and applications. Materials of modern industry; ferrous metals, non-ferrous metals and plastics. SAE numbering system for steel, heat treatment of steels small tool operations. Technical sketching in the orthographic and the isometric systems. Drawing office systems and work routines; filing systems, change notes, design and layout procedures, printing of drawings, print distribution and records. Common devices and mechanisms such as springs, cams, gears, clamps. Permanent assembly of parts by welding, brazing and soldering. Types of welding. Canadian Welding Bureau symbols and recommended practices. Design of fabricated and welded parts; special design and production techniques for welded products.

ENDR 104 / Pipe Drafting Design

Introduction to pipe classification, jointing methods, and pipe fittings. Valves; types, function and design. Representation of pipes, fittings and valves by single and double line symbols. Drawing methods; orthographic, developed, oblique, isometric and diagrammatic. Pipe bending and shop fabrication methods. Piping detail drawing using various techniques, and unit arrangements of manifolds, bypasses, drains and instrumentation connections. Selection of materials and equipment from catalogues. Pipe supports and hangers. Expansion joints and simple flexibility problems. Pipe insulation.

ENGINEERING DRAFTING - Cont'd

ENDR 105 / Technical Drawing

Equipment, instruments and materials. Pencil technique, lettering, geometrical constructions. Orthographic projection. Pictorial drawing; oblique, isometric. Dimensioning; fractions, decimals, Ford Rule, dimensioning systems. Freehand drawing; orthographic, isometric, proportions, notes. Sectional views; full, half, offset. Section lining, conventions. Auxiliary views; primary and secondary. Fasteners; threads, threaded products, terminology, symbols, rivets, keys, welding, brazing. Pipe fittings and valves; types of fittings, piping drawings, symbols. Assembly drawing; sectional views, exploded assemblies, bills of material. Detail working drawings: surface finish, tolerances, manufacturing methods. Cams; motion, displacement diagrams, cam profiles. Gears; principle types, terminology, manufacturing. Developments; basic descriptive geometry, parallel and radial line developments. Electrical and electronic drawings; symbols, wiring diagrams, instrumentation symbology, block diagram, printed circuits.

ENDR 107 / Kinematics (Geographical)

Techniques of mechanism analysis. Displacement (linear, angular); paths of points on rotating bodies, producing specific paths. Linkages; to produce a given path, basic four bar, crank and slider, quick return, reverse, slow motion. Graphic analysis of motion velocity and acceleration, gear trains, cams.

ENDR 113 / Technical Drawing

Application of linkages, levers and cams in various mechanisms; engineering catalogue reference and selection of bearings, materials and basic jig and tool components; assembly drawings and bill of materials.

ENDR 115 / Industrial Engineering

Industrial engineering, history of modern industry. Aspects of industrial organization and management, plant layout, location and construction. Materials handling, production and inspection, quality control control of production, time and motion study, material control, plant and safety equipment, industrial relations, and incentive payments, personnel selection, training, human relations and labour organization.

ENDR 118 / Descriptive Geometry

Orthographic projection, primary and secondary auxiliary views, basic descriptive geometric principles, points, lines, planes, true lengths and true shapes found by auxiliary views and by revolution. Skew lines, piercing point of a line and a plane. Development of surfaces by parallel lines. Radial line and triangulation methods.

ENDR 119 / Technical Drawing

Review of drafting equipment and instruments, their use, selection and care. Review of geometrical constructions, and terminology. Orthographic projection, principal views, pencil techniques, alphabet of lines and basic dimensioning. Visualization problems involving missing lines and missing views. Principal views in alternate positions. Advanced detail working drawings. Sectional views: full, half, offset, removed, and revolved. Conventional practices and section lining symbols.

...cont...

ENGINEERING DRAFTING - Cont'd

ENDR 119 / Technical Drawing (Continued)

Small tool operations, surface finish, tolerance, dimensioning problems specifications and notes on drawings. The SAE numbering system for steels. Technical freehand sketchings. Welding drawings. Standard welding symbols as authorized by the Canadian Welding Society. Assembly drawings, bills of material and estimating. Manufacturing processes. Heat treatment of steels. Electrical and electronic symbols, circuit diagrams and schematic diagrams. Symbols for pipe fitting and valves. Piping standards and specifications. Piping drawings. Isometric drawing and freehand sketching. The study of industrial blueprints and specifications.

ENDR 123 / Engineering Drawing & Design

Freehand sketching and machine drafting of various flow diagrams and plant layouts, utilizing standard and specially designed materials; handling equipment as used in industry.

ENDR 130 / Jig Fixture Design I

Freehand sketching and machine drafting of basic jig and fixture designs, emphasizing current production methods and organizations.

ENDR 131 / Jig Fixture Design II

Freehand sketching and machine drafting of advanced jig and fixture designs, emphasizing current production methods and organization.

ENDR 132 / Jig Fixture Design III

Freehand sketching and machine drafting of assembly and welding jigs and fixtures and welding fixtures, emphasizing current production methods and organization.

ENDR 133 / Jig Fixture Design IV

Freehand sketching and machine drafting of cutting tool design, multi-tool layouts and gauge design emphasizing current production methods and organization.

ENDR 134 / Design of Jigs & Fixtures

Freehand sketching and machine drafting of various jigs, fixtures, and other tools used in large scale manufacturing.

ENDR 140 / Die Design

Freehand sketching and machine drafting of basic blaking, piercing and cut-off and bending dies.

ENDR 158 / Drafting & Design

Drafting equipment and instruments, geometrical constructions in common use, one view scale drawings, linework, freehand lettering, orthographic drawings of machine parts, sectional views and auxiliary views, conventional drawing practices, dimensioning of detail parts for manufacture, notes on drawings, machining terms, specifications, pictorial drawings.

ENDR 201 / Drawing & Product Design

Detail working drawings of an advanced nature. Design layout drawings drawn from engineering information and specifications. Projects involving various types of bearings, cams and gearing. Use of manufacturers' catalogues, standard parts, and engineering reference books. Manufacturing tolerances, allowances, machine fits and dimensioning systems as related to product design and manufacturing methods. Application of machine components including linkages, toggles, levels, eccentrics. Design principles and applications of basic gauges such as snap, plug. General design principles of jigs and fixtures. Application of commonly used jigs such as drill, plate, etc., and application of machine fixtures. Basic principles and applications of structural drawing. Checking drawings SAE codes and offical specifications.

ENDR 202 / Manufacturing Processes

A study of the factors which determine the selection of manufacturing processes. Casting processes; sand, permanent mould, injection. The forging process. Hot working and cold working, adhesives, powdered metallurgy. Plastics, thermoplastic and thermoset; materials, fundamental characteristics, principles of main processes, design considerations, selection of materials, productin methods and techniques. Welding: welding processes and their applications to product design, production techniques, and materials. Heat treatment of steels. Production machine tools. Automatic machine tools used for thread cutting, gear and cam production, computer control of machine tools. Sheet metal and heavy plate fabrication. Design and cost factors of production. Inspection and quality control. Assembly and testing. Visits to manufacturing plants and industrial organizations will form a comprehensive part of this course.

ENDR 204 / Design & Layout of Piping Systems

Arrangement of piping systems for steam, water, gas, oil, chemicals, using conventional layouts and interpretation of the relevant codes. Layout of equipment, pressure vessels and related piping in terms of efficient flow conditions, and clearance from structural features. Flexibility studies and arrangement of hangers, guides and anchors. Pipe sizing, and pressure drop calculations. Special applications for control valves. Study of common operations, feed heating, condensing, evaporation. Estimation of piping costs. Visit to industrial piping installations.

ENDR 222 / Descriptive Geometry II

Principles and applications involving oblique surfaces. Lines and points in oblique planes. Location of plane figures in oblique planes. Intersections of lines and planes, oblique lines, oblique plane and polyhedron. Dihedral angles. The system of revolution for finding true length of oblique lines, true shape of oblique planes, dihedral angles. Use of counter revolution. Development of surfaces and intersected polyhedrons by triangulation. Pattern and development of drawings, bend allowances, semas, and methods of joining. Single curved surfaces, Development of transition pieces. Double curved surfaces. Contoured surfaces and practical applications such as ships' sheer drawings. Problems which pertain to a wide range of general machine and mechanical industries.

ENGINEERING DRAFTING - Cont'd

ENDR 225 / Materials & Processes

Study of piping and valve materials, with reference to A.S.T.M. specifications and codes. Welding types and methods. Welding symbols and design considerations. Processes used in food, drugs and petro-chemical industries. Principles of energy systems, atomic fossil-fuelled, and hydraulic pollution control systems. Visits to industrial plant and utilities.

ENDR 241 / Tool Design Theory

Manufacturing engineering organization: cutting tool design, form tools, process planning, turret lathe, tooling layouts, automatic lathes, location and clamping theory, drill jib and fixtures principles, broach design, gauges, presswork, tooling economics.

ENDR 242 / Die Design

Freehand sketching and machine drafting of basic blanking, piercing, cut-off, bending, draw and progressive dies.

ENDR 250 / Industrial Engineering

The selection of process of manufacture and case histories of materials handling, plant layout, product flow, cost analysis and maintenance requirements; the selection of equipment from engineering catalogues.

ENDR 255 / Machine Tool Theory

Cutting tools; cutting and tool life theories, loads & forces, use of H.S.S. & carbide tools, positive and negative cutting rakes. Tooling "Set-ups" for turret lathes, cam design for single spindle autos. Set-up considerations for mass production, time study.

ENDR 340 / Die Design III

Freehand sketching and machine drafting of advanced draw dies and complex blank, pierce and bend progressive dies.

ENGLISH

ENG 100 / Language & Communication

Semester 1 - Oral and written communication. The development of clear, concise, well organized communication with specific application to technical writing and oral presentations. Assigned readings.

Semester 11 - Development of logic and ideas. A study of the literature of the related technology. Written and oral presentations.

ENG 100 / Language and Communication (Business related)

Semester 1 - A review of fundamentals: grammar, punctuation and sentence structure; spelling and vocabulary; comprehension exercises; a detailed study of the report; the memo; personal business letters: inquiry, request and response; oral communication.

Semester 11 - The form and punctuation of letters; the purposes and qualities of business letters; letters of inquiry, answers to inquiry, order, claim and adjustment, credit, and collection; sales letters from wholesalers to retailers.

ENGLISH - Cont'd

ENG 101 / English

Precise writing, technical description, current reading, reading for enjoyment, reading for information.

ENG 103 / English

Business communications: effective expression of ideas. Business correspondence. Technical writing: the technical report.

ENG 104 / Language and Communication (Business related)

The basic parts, forms and punctuation styles which are used in business letters; the positive tone, the reader-oriented attitude, and the basic requirements of business communication; analysis of specific letters; inquiry, answer to inquiry, order, claim and adjustment, credit, collection, and sales letters.

ENG 110 / Language and Communication

English composition; effective English in business communication; rapid reading and comprehension; business letter writing; letters of application, sales promotion, credit, and collection; oral reports; novels.

ENG 111 / Language and Communication

Oral and written business communication; preparation and delivery of formal and informal speeches on related subjects, the precis, technical research report writing, using library research. A study of an anthology of modern short stories.

ENG 123 / Language & Business Correspondence (Fashion Technology Related)

Semester I - Basic English grammar and composition, vocabulary of trade, spelling, pronunciation and use of trade terms. Use of dictionary, library. Sentence structure and paragraph structure. Reading for comprehension.

Semester II - Business correspondence; study of various types of the business letter and forms. Practice in writing and answering business letters applicable to trade. Preparation of business forms. Reading for comprehension.

ENG 151 / English (Fashion Technology Related)

Basic vocabulary of the fashion trade; words, terms and usage.

ENG 161 / English (Fashion Technology Related)

Advanced level of vocabulary of the fashion trade.

ENG 200 / Language and Communication

Semester I - The preparation and delivery of formal talks and lectures on technical subjects. The philosophy of good writing. Assigned reading.

Semester II - Technical research; study of basic library resources used in research. The technical report; organization and format. Assigned reading.

ENGLISH - Cont'd

ENG 201 / English

Mass media; technique of criticism; qualities of leadership, impact of automation; oral communication in business.

ENG 201 / Language and Communications (Business related)

Psychological techniques of letter writing; sales letters, advertisements, the memo, social business letters, brochures and company bulletins; oral communication: job interview, panel discussion, simulated business conference; business problems; literature used as a basis for speech practice and discussion; articles of interest to the business student.

ENG 204 / Language and Communications (Business related)

A review of fundamentals; the job getting process; the report (sales and progress); letters; planning meetings and conferences; oral communication; literature.

ENG 210 / Communication

A study of different aspects of report writing. Oral presentation of topics related to food management. Special attention will be paid to the positive approach to business communications. One novel or play may be studied.

ENG 251 / English (Fashion Technology related)

The language of the Fashion World: reports, fashion show scripts, writing for the media.

ENG 252 / English (Fashion Technology related)

The language of the Fashion World, advanced level. The media of the wholesale fashion industry.

ENG 261 / English (Fashion Technology related)

The language of the Fashion World: emphasis on study of the history of fashion, the careers of famous designers.

ENG 300T / Technical Report Writing

This is a one semester course comprehensively covering most aspects of writing a major original thesis or report assigned by the Electronics department. It will give the student step-by-step guidance in organizing, preparing, and composing a formal report.

ENG 301/304/ English and the Legal World (Business & Commerce related)

Fictional and non fictional writing about law, lawyers, notable court cases, etc. Revising and enlarging writing skills, grammar, punctuation, and vocabulary.

A broady study of culture. The student will be able to understand allusions made in court, to relate to people from all walks of life, and to see and understand issues in context.

ENGLISH - Cont'd

ENG 332 / Business Communication

Semester 1 - Advanced forms of business writing: employee regulations from communication standpoint. Further work in public speaking.

Semester 11 - Correct writing of advertising letters and brochures. Dealing with the public in written transactions. Professional organizations: conduct of meetings, minutes of meetings, records and bulletins. Assigned reading for comprehension.

ENG 351 / Advanced Writing

Theses, articles, etc.

ENG 361 / Advanced Writing

Media, scripts, etc.

ELECTIVE STUDIES

ES 211 / Twentieth Century Thought & Current Issues

The student will examine the arguments related to controversial issues and write assignments on selected contemporary writings. Topics may include: poverty, war racism, the French-English problem, Canada and the Indian problem, and the impact of Technology.

FABRICS

FAB 150 / Characteristics

Characteristics of fabrics requiring special knowledge re sewing, ironing, pressing, packing, molding, etc.

FAB 151 / Selection

The selection of the right thread with the right needle at the tight time; stitches, etc. for various fabrics, etc.

FAB 250 / Behaviour under Working Conditions

Molding, etc.

FAB 251 / Fabrics

Knits, dyes, processing procedures including synthetic and natural fibres.

FAB 261 / Testing Fabrics

Bursting, fading, abrasion, other fabrics such as plastics, furs, etc.

FAB 350 / How to purchase, justify, stock and promote; working with mills; special designs, etc.

FASHION

FASH 100 / Fashion Business Procedures 1

Basic business knowledge and law; opening a business; licenses; taxes; (role-playing), etc.

FASHION - Cont'd

FASH 101 / Fashion Business Procedures II

Insurance; auditors, bookkeeping; reporting, etc. (role-playing).

FASH 201 / Fashion Business Procedures III

Corporate structures; partnerships; obligations and privileges, (role-playing).

FASH 211 / Fashion Business Procedures IV

Inventory-taking, controls, etc., costing; pricing; sales; laws; consumer information, etc.

FITNESS

FIT 100A

Statistics and measurement, procedures are studied and sub maximal fitness tests are examined.

FIT 100B

A followup to Fitness 100A involving more elaborate testing. Skinfolds, strength testing, cardiovascular testing, and an introduction to gas analysis are studied.

FIT 101A

The first of a two semester lecture and laboratory course in Gross Human Anatomy. This section includes a detailed study of the skeleton, upper limbs, thorax, abdomen, pelvis and perineum.

FIT 101B

The second part of a two semester lecture and laboratory course in Gross Human Anatomy. Included in this portion is a detailed study of the skeleton, lower limbs, head, neck and central nervous system.

FIT 102

Psychology of Exercise studies the components involved in total fitness and how they (social, emotional and physical) interact.

FIT 103

Effects of physical activity on the muscular, circulatory and respiratory systems of the human body are studied.

FOOD PREPARATION

FP 100 / Food Preparation I & II

The student is introduced to basic cooking by preparing basic stocks, soups and sauces followed by preparation of vegetables, rice, pasta products, egg dishes and the usage of basic flavourings, herbs and spices. Extensive instruction is given on the cooking of seafood, meats and poultry, and practice in the preparation of these dishes is arranged.

FOOD PREPARATION - Cont'd

FP 203 / Convenience Foods

A study of the influence of consumer demands in establishing the gross parameters of research and development in the industry. Explanation and study to do with the manufacture and packaging techniques used in the fabrication of convenience foods. Quality testing, improvement and convenience requirements.

FOOD TECHNOLOGY

FT 100 / Food Products & Standards

Food products which are available to, and commonly used in, the hospitality industry are classified and discussed in specific groups as to their grades, sizes, availability, marketing methods, standard containers, and quality factors; vegetables, fruit, dairy products, cereals, beverages, poultry, fish, shellfish and meats.

FT 130 / Quantity Food Preparation Practical

The four basic stocks, the six basic sauces and their derivatives, the preparation of garnishes and their uses, rice cooking as entrees and appetitives, pasta dishes as entrees and garnishes, the roasting, broiling, steaming, poaching, boiling, deep fat frying and grilling of all meat, fish, poultry and game, egg cookery as entrees and garnishes, salads, and dressings, sandwiches hot and cold, preparation of hot and cold buffet, cold buffet decoration, the use of herbs, spices and wines in cooking.

FT 131 / Advanced Quantity Foods

In order to apply the theory the apprentice chef is now introduced to laboratory work. All aspects of professional food preparation including most of the popular items and dishes occurring on national and international menus are demonstrated to the student and produced by him under the supervision of an instructor.

FT 200 / Food Engineering

This course will be over two semesters, covering the engineering concepts and unit operations applicable to food processing.

SEMESTER I: Mechanics; fluid mechanics; transfer and rate processes, process control instrumentation.

SEMESTER II: Unit operations; fluid flow, heat transfer; evaporation; drying; extractions; distillation; filtration; mixing; material handling.

Lecture = 3; Laboratory = 3 hours.

FT 201 / Food Processing

This course will cover two semesters. The general characteristics of food raw materials, harvesting, assembling and receiving of raw materials; methods of food preservations; chemical, canning, freezing, drying; processing objectives including factors influencing food acceptability and government grading; packaging, water; waste disposal; sanitation.

(Plant tours will be used to supplement the lectures and will be combined with Food Engineering)

FOOD TECHNOLOGY - Cont'd

FT 300 / Evaluation and Control of Food Quality

(a) A discussion of the Quality Control Department, responsibilities, economics of product quality, development of policy; relationship to management, sales and purchasing, research and development and production. Establishing of specifications for all materials and ingredients, processes and finished products. Sampling, trouble shooting.

(b) An intermediate course including a review of basic statistics (Frequency distribution, theory of probability, nature of variation, Guassian, Binomial, Poisson and Hyper-geometric probability); control charts for variables (x-R) control chars for attiributes (P & C charts); theory of sampling (Dodge-Romig, military standards): machine capability.

FT 301 / Food Processing

This course is an advance treatment of FT 201 and devoted to those processes in which two or more ingredients are combined to produce a food product.

FUR

FUR 143 / Theory and Recognition of Furs

Familiarization with more than seventy different furs of ten families in all their mutant, processed and dyed forms; parts and uses of various pelts; raw and dressed furs and the processing of one into the other; wild furs and bred furs and their differences by section, genetics, and food; introduction to the profitable breeding of fur-bearing animals; care and maintenance of fur pelts and garments, including storage, cleaning, repairs, fur insurance, handling; some Canadian history as it evolves from fur trading. Recognition labs and plant visits.

FUR 144 / Fur Manufacturing Techniques

Care and operation of tools; selection of factory materials and sources of supply; introductory fur matching and selection of pelts for garments; preparation for cutting; introductory cutting and slicing; introdu-tory operating and machine sewing; blocking and nailing to pattern up to the finished article; study of textiles used in fur factory; detailed study of six of ten fur families used in industry, including techniques of manufacture; making of fur hats, collars, ascots, vests, novelties, etc.

FUR 145 / Fur Fashions

History of fur fashions and fads from the caveman; introductory fur design, introduction to fitting, altering, sizing fur garments and paper patterns for fur styles with reference to advanced work in special measurements, creativity, copying, field visits and observation. Students will each make:
Men - Fur hat (wedge type) and fur vest;
Women - Fur hat (Pillbox type) and fur ascot.

FUR - Cont'd

FUR 146 / Consumer Education

A special module covering the recognition of different furs and how they are described for selling purposes - consumer education re fur and fashion.

FUR 147 / Fur Marketing

Discussion of trapping by Indians,Eskimos, other Canadians; handling of raw pelts at source; collectors; fur skin dealers; fur auction sales; international markets; royalties, duties, taxes, fur ranchers (farmers); purchasing by manufacturer; distribution by manufacturer of finished garments; showings and fashion shows, fur retailing by department stores, fur stores, custom furriers, ready-to-wear stores; fur advertising and promotion; fur public relations and business ethics. Field visits and shows.

FUR 153 / Advanced segment of FUR 143

Semester II

FUR 154 / Fur Manufacturing Techniques (Advanced Segment)

Semester II

FUR 155 / Fur Fashions (Advanced Segment)

Semester II

FUR 156 / Consumer Education

Care and maintenance (Advanced Segment) - Semester II

FUR 157 / Fur Marketing

Advertising; buying, (Advanced Segment) - Semester II

FUR 243 / Look-Alikes

Stencils; unusual furs

FUR 244 / Manufacturing

Dropping ("let-out"); geometrics

FUR 245 / Original Fur Design and Pattern Drafting

FUR 247 / Advanced Fur Buying

Skins, garments

FUR 253 / Fur recognition

Stencils and unusual furs.

FUR 253 / Manufacturing techniques

Advanced

FUR 255 / Fur Design and Pattern Drafting

FUR 257 / Advanced Fur Buying

Fur garments; auction sales; international markets.

FURNITURE

FURN 101 / Cabinet and Chair Making

The student will make a series of projects designed to cover the basic skills and techniques required in making cabinets and furniture.

FURN 102 / Wood Machining

Safety precautions and practices that should be observed will be stressed. Principle operations of the basic woodworking machinery will be practiced.

FURN 103 / Finishing

Surface preparation and basic colour treatments including straining and glazing. Hand and spray application of varnish, shellac and lacquer.

FURN 104 / Upholstery

Practical elementary upholstery including: sinuous springing, cutting, power sewing, stuffing, fabric application and trimming.

FURN 105 / Materials

Studies and discussions on materials used in the Furniture industry.

FURN 106 / Technical Drawing and Blueprint Reading

Introduction to Orthographic and Pictorial Drawing and Elementary Blueprint Reading.

FURN 108 / Factory Organization

Factory legislation, health and safety measures. Short history of the rise of the factory system.

FURN 151 / Cabinet and Chair Making

The student will make projects designed to add to his basic knowledge and skill of cabinet and chair making. This will include making patterns, veneering both flat and curved surfaces.

FURN 154 / Upholstery

Practical upholstery including: webb and coil springing, fitting fabrics and cushion filling.

FURN 155 / Materials

Studies and discussions on materials used in the Furniture industry, continued.

FURN 156 / Technical Drawing

Intermediate orthographic and pictorial drawing.

FURN 157 / Design

A history of design and evaluation of furniture from earliest times to modern times.

FURN 157 / Factory Organization

Communication, method study, work study, production and quality control.

FURNITURE - Cont'd

FURN 162 / Wood Machining

Setting up and operating woodworking machinery in such operations as turning, shaping, routing, and making simple jigs will be included in this section.

FURN 163 / Finishing

Treatment of surface faults before and after finishing. Stripping and refinishing old furniture.

FURN 201 / Cabinet and Chair Making

The projects that the student will be making in this section are designed to cover the advanced techniques and skills in cabinet and chair making. Simple caring will be included.

FURN 202 / Wood Machining

Machining theory and maintenance, and making jigs, saddles and templates.

FURN 203 / Finishing

Development of finishing systems. Application and use of special colour treatments including shading, bleaching, distressing.

FURN 204 / Upholstery (including Field Trips)

Practical upholstery including: spring edges, channel backs, tufted backs and fan backs. Field trips to local upholstery shops and factories.

FURN 205 / Materials

Studies and discussions on modern materials entering the Soft Furnishing Industry.

FURN 206 / Technical Drawing

Advanced orthographic and pictorial drawing.

FURN 207 / Design

Standard practices in the design of cabinet work and chair making. The physical relation of people to furniture.

FURN 208 / Factory Organization

Purchasing, stock control and costing.

FURN 209 / Colour

Munsel colour system.

FURN 210 / Styles and Colour

Studies on present day styles in upholstered furniture. Colour co-ordination.

FURN 214 / Upholstery Methods

Discussions on methods used in Canadian upholstery shops and factories.

FURN 251 / Cabinet and Chairmaking

The student will make furniture of his own design as well as repair, restore and renovate old pieces of furniture.

FURNITURE - Cont'd

FURN 254 / Upholstery (including Field Trips)

Practical upholstery including: semi-attached backs, leather or leatherette application, antique restoration and re-styling. Field trips to shops, mills, exhibitions, etc.

FURN 255 / Materials

Materials used in antique upholstered furniture.

FURN 256 / Technical Drawing

Production made and custom made furniture drawings.

FURN 257 / Design

The relation and arrangement of furniture to its environment. The student will also originate a project of his own design.

FURN 258 / Factory Organization

Small business management, and employer-employee and customer relations.

FURN 259 / Colour

Munsel colour system (cont'd).

FURN 260 / Costing

Estimating the cost of new upholstered furniture.

FURN 261 / Re-Cover Estimating

Estimating the cost of re-upholstering furniture; what to charge.

FURN 262 / Wood Machining

Advanced machinery techniques. Grinding and sharpening of saws, knives, and cutters will be covered as well as mechanical adjustments and minor repairs to woodworking machines.

FURN 263 / Finishing

Special hand and spraying techniques including French polishing. Touch-up and restoration of defects in old or damaged finishes.

FURN 264 / Antique Upholstered Furniture

Studies of antique upholstered furniture and reproductions.

GRAPHIC DESIGN

GD 100 / Foundation Drawing

The student will do still life drawing in line and then add shading. The student will sketch local houses in the area using various drawing techniques.

GD 101 / Life Drawing

Starting near end of the first semester, contour and line drawings are applied to life drawing. Quick gesture and action poses are emphasized. A completely finished rendering of the life figure drawing in large size is required near the end of the course.

GRAPHIC DESIGN - Cont'd

GD 102 / Alphabet Lettering

A thorough exposure is given, beginning with history, current usage, terminology and family. Practical application is the keynote, commencing with pencil, pen, brush and felt tip indication. Co-ordinated with knowledge gained, emphasis is placed on devising letters to indicate special effects. Modern equipment is available for photocomposition.

GD 103 / Foundation Design

The students will be taught two dimensional design in which a frame of reference will be used, and they will be asked to use geometric and free shapes, arranging these shapes in a way to produce contrast rosie, value and textures. They will also do three dimensional designs using paper and cardboard, and will produce some basic advertising layouts.

GD 104 / Foundation Colour

The students will make an extensive study of the Munsell Colour System, drawing a colour sheel and producing various colour combinations using the Munsell System. They will also be asked to design colour value expercises.

GD 105 / Foundation Techniques

Using objects d'art, in a series of galleries at the Royal Ontario Museum, various techniques are applied to render commercially oriented projects.

GD 106 / Foundation Mechanicals

The student will be taught how to use drafting sets to produce finished mechanical drawings, and the basic uses of amberlith overlays,

GD 107 / Foundation History of Art

The students will be taught the basic history of art and how it relates to our present graphic design situation, so that they may use some of these ideas to relate to today's advertising art.

GD 201 / Illustration

Concepts in books, magazines, T.V., graphics, murals, etc. A course mainly concerning applied art, but also encompassing personal picture making.

GD 202 / Abstract Design

The student will be encouraged to give free ranged to his abstract capabilities in work in the field of free design.

GD 203 / Graphic Design

The student will be asked to produce some specific graphic design and to supply some of his own projects.

GRAPHIC DESIGN - Cont'd

GD 204 / Print Making (Screen Process)

Students are taught the three methods of screen-making: - Tusche, handcut, photographic-- and apply these methods, using suitable inks to print their own art work.

GD 205 / Graphic Techniques (T.V.)

The student will produce layouts for program titles, commercials, interludes and animation storyboards.

GD 206 / Graphic Mechanicals

This will be an exercise in producing the finished working drawings of projects designed in the graphic design period. It will entail overlays and key-line drawings, to produce a camera ready piece of art work.

GD 207 / Historical Research

This will be a course of History of Art in which the Bauhaus School will be thoroughly studies and related to modern advertising tends and layout trends. The Art Nouveau trend will also be researched and its connection with modern advertising will be carefully studied.

GD 208 / Packaging Mechanicals

This will be an exercise in producing a finished camera ready piece of art work for each package design produced.

GD 209 / Life Painting & Drawing

The students will learn to develop abstract paintings. Some will be from graphic design approach - others will be an abstract of the model. Both realistic and abstract forms of painting will be developed.

GD 210 / Packaging Design

The student will be asked to design some packages and may have the option of selecting other package designs they wish to work on.

GEMMOLOGY

GEM 167 / Elementary Gemmology

Study of precious stones - cuts, shapes, etc.

GEM 267 / Intermediate Gemmology

Study of precious stones - leads to exams of the Gemmological Association of Great Britain Fellowship.

GEM 367 / Advanced Gemmology

Study of precious stones for experienced students.

GRAPHIC ARTS

GR 100 / Layout, Design, Typography

Basic principles of layout, design, and type face selection. Typography in various media; newspapers, books, brochures, advertising, etc. The relationship of typography with other arts. Preparation of mechanicals, illustrations, and display advertising.

GR 101 / Hot Metal Composition

Principles of type composition. Make-up of jobs using hand composition, ludlow, saw, mitering machine and repro-proof press. Job planning including considerations for printing and binding. Development of hot metal machines, their mechanisms, and machine principles. Preventive maintenance and safety regulations. Setting of matter justified, flush left, flush right, centered, leadered work and tabular; proof reading. Typesetting a project, which will be printed.

GR 105 / Photomechanical Reproduction

A basic course covering the operation of process cameras. The calibration of process cameras and darkroom equipment for line, fineline and halftone negatives. The application of coloured filters and use of panchromatic film. Making photographic contacts, duplicates, spreads and chokes. The theory of photographic lenses, light sources, film emulsion and processing solutions.

GR 110 / Film Imposition and Printing Surface Preparation

A basic course for black and white and line colour stripping. The course introduces job planning and layout of flats containing line negatives, halftone negatives, line colour negatives and duotones. Imposition is included with the preparation of folded dummies and layout sheets for various types of bookwork. Darkroom techniques for making photographic contact and the exposing and deve-opment of presensitized offset plates are an important part of this course.

GR 114 / Machine Printing Letterpress

Press equipment. Heidelberg automatic platen, Model "T" 10" x 15". Heidelberg automatic cylinder 15" x 20 1/2". Course covers safety, housekeeping, lubrication, paper handling, press familiarization, set-up and adjustments, feeder and delivery, imposition, register, packing and makeready, letterpress inks, paper stock, running problems and corrections.

GR 115 / Machine Printing (Basic Offset)

A beginners' course covering the fundamentals of offset lithography, feeding dampening systems (both conventional and alcohol), ink control, and running of one colour, multi-colour and process colour projects. This program leads to GR 116.

GRAPHIC ARTS - Cont'd

GR 116 / Machine Printing (Offset)

Larger single color presses. Good housekeeping and safety, lubrication. Measuring instruments and devices for pressmen. Cylinder arrangements. Dampening system, conventional and with alcohol, inking and register systems. Plate, paper and ink as related to the pressman. Successful operation of a single color press.

GR 125 / Binding and Finishing

Handling stock. Introduction to Citation Autospacer and basic cutting. Introduction to 17 x 22 and 26 x 40 Baum Folders and elementary folding. Operation of Bostitch 19E. Drilling and round cornering. Basic hand binding and stamping. Job planning.

GR 202 / Photocomposition

Good housekeeping and preventive maintenance. Operating principles of Photon Textmaster 713-20, and Photon Keycomp 10. Merganthaler VIP, film strip, optics and escapement; memory programming, tape codes, test panel. Operation of Compugraphic (7200) display. Generation of raw tape. Correction by CRT terminal.

GR 205 / Photomechanical Reproduction

An advanced course in halftone photography and machine processing. Includes the operation, maintenance and control of film processors, use of reflection and transmission densitometers. The calibration of various types of contact screens to camera and processing conditions. Making duotones and other techniques. An introduction to colour separation procedures.

GR 210 / Film Imposition and Printing Surface Preparation

Advanced techniques in black and white, line colour and four colour process stripping are introduced. Also included are: contact work and making spreads and chokes, the preparation of various types of offset lithographic plates, step and repeat methods and an introduction to the programming and operation of a photocomposing machine.

GR 214 / Machine Printing Flexography

Press equipment is a two-unit "Lembo" flexopress. Course covers safety, housekeeping, lubrication, roll feed and web tension, the printing unit, flexographic process, services on press of air, water, gas and electrical controls, oven drying, roll rewind, circulating pump for inking system, flexo inks and their compatible solvents, ink viscosity measurements, rubber plates, anilox rolls, ink metering system, position and register, substrates, running problems and corrections.

GRAPHIC ARTS - Cont'd

GR 215 / Machine Printing Rotogravure

Press equipment is a two-unit "Lembo" rotopress. Course covers safety, housekeeping, lubrication, roll feed and web tension, the printing unit, rotogravure process, services on press of air, water, gas and electrical controls, oven drying, roll rewind, circulating pump for inking system, roto inks and compatible solvents, ink viscosity measurements, doctor blade finishing, position register, substrates, running problems and corrections.

GR 216 / Machine Printing (Offset Intermediate) Single Colour

Offset lithography on single colour Heidelberg, Harris and Miehle Presses at the Intermediate level. Course content emphasizes color matching and projects. Projects run during this course will include one colour, multi-colour and process work.

GR 217 / Machine Printing (Offset - Intermediate) Two Colour

Offset lithography on two-colour Harris and Miehle Presses. Fundamentals of two-colour offset lithography, feeding, inking systems, dampening systems, (conventional and alcohol), press familiarization, theory and practical application of two-colour offset printing. This course leads to advanced pressmanship.

GR 220 / Quality Control

Paper and board manufacture. Quality assurance tests for printability and runnability of coated and uncoated paper and board for Letterpress, offset, flexography and rotogravure. Formulation of inks and their properties as related to each major printing method. Procedures and tests to obtain optimum print quality through the combination of a particular type of ink, paper and the method of printing.

GR 225 / Binding and Finishing

Intermediate folding. Binding magazines. Operation of Muller Automatic Stitcher. Operation of Muller Gathering Machine. Cerloc Combo. Flush cut hard cover binding. Adhesive Binding and the Pony 5 Muller Roto-Binder.

HEALTH

HEAL 100

A study of current issues pertaining to health and fitness. The ability to research and evaluate current studies will be developed.

HEAL 101

Metabolism of carbohydrates, lipids, proteins, hormones and vitamins in humans will be studied. A special emphasis will be placed on diets for certain physiological conditions. Involves energy costs, nutrition and physical performance.

HOTEL INDUSTRY

HIND 100 / Hotel Orientation

History; scope; organization; problems of, and opportunities in, the hospitality industry. Discussions of the organization, the departmental functions, and the operational difference of various types of hotels.

HIND 101 / Food Orientation

History; scope; organization; problems of, and opportunities in, the food service industry. Discussions of the organization, the departmental functions, and the operational differences of various types of food operations.

HIND 102 / Dietary Orientation

History; scope, organization; problems of, and opportunities in, the health care industry. Discussions of the organization, the departmental functions, and the operational differences of various types of health care operations where diet therapy is a factor.

HIND 103 / Food Cost Control

An extensive study of the two aspects of food cost control; the system/records control and the management of employee production. Purchasing, receiving, storage and issuing controls. Further control through portion standardization, forecasting, use of left-overs, standard recipes and production schedules.

HIND 104 / Menu Planning

The history of menus and their current use as food merchandise catalogue. Planning the well-balanced menu. The classical menu and various menu forms in various food service establishments. The limited, specialty, table d'hote, a la carte and cyclical menu planning. Costing and pricing the menu.

HIND 105 / Accounting I & II

This course will deal with the bookkeeping and accounting functions used in general business, starting with the basic structure of accounting through the debit/credit transaction journals, posting, ledgers, trial balance, work sheets, adjustments and closing entries, profit and loss statements and balance sheets.

HIND 106 / Front Office I & II

The organiation of the front desk, its importance to the guest and the hotel. A study of the methods, records and routines used in room reservations, guest registration, cash control and guest charges. Practical instruction on all front office equipment, including the key, mail, information and room racks. Front office salesmanship and psychology. Control of "skippers" and other problem guests through established credit policies. Extensive instruction in night audit procedures, balancing the day's business through the practical use of the N.C.R. 4200.

HOTEL INDUSTRY - Cont'd

HIND 108 / Beverage Preparation & Service

Bar layout and equipment, history and manufacture of alcoholic beverages, beverage preparation theory, practical preparation of mixed drinks and cocktails. Pre-opening preparation of the bar. Extensive study of wines of the world with emphasis on selection, tasting, and service.

HIND 109 / Automatic Food Merchandising

The growing importance of vending in today's market. Various types, styles, capacities and advantages/disadvantages of various machines. The importance of machine layout. The special preparation, storage and packaging required of vending foods. Inventory and money flow control.

HIND 200 / Hotel Accounting

The function, responsibility and authority of the accounting department. The "Uniform System of Accounts for Hotels". Control of accounts payable, accounts receivable, payroll, daily cash flow, credit and bad debts. Fixed assets, liability and capital accounts. Budgeting and break-even analysis. Operating statements, their use and evaluation.

HIND 201 / Hotel Housekeeping

The organization, location, function and importance of the housekeeping department. Duties of the housekeeper, inspectress, and maid. Purchase specifications, storage and issue control of linen and other supplies. Cleaning of carpets and walls. The equipment, layout and function of the hotel laundry.

HIND 202 / Banquet Management

Organization and functions of the banquet department within food service operations and hotels. The banquet sales office. Types of banquets, their booking, control, planning, set-up and service procedures. The banquet bar. Table arrangements and table settings.

HIND 203 / Food Facilities Layout

Discussion of significant points in the planning process for new or remodelled food service operations, including creation of image, critical flow patch analysis, technical drawings and detail, blue-print readings, selection of equipment and communicating these ideas in an over-all food facility layout plan presentation.

HIND 204 / Human Relations

Introduction to general psychology: perceptions, emotions, motivations, problem-solving, personality, leadership. Human conflict on the job. Job satisfaction. Supervisory techniques in the hospitality industry. Attitudes of staff towards fellow employees and customers.

HOTEL INDUSTRY - Cont'd

HIND 205 / Dining Room Service

Both theory and practice in dining room set-up and organization, table arrangements, purpose and use of various dishes, glassware and cutlery. Reservation control. French, Russian and American table service. Taking the order and "selling" the customer. Gueridon cooking and carving of food at the guest's table.

HIND 206 / Hotel Law

A study of the innkeeper-guest relationship, including the responsibilities of the innkeeper, his duty to provide for the safety of his guests, his liability for loss or damage of guest's property, his right of lien and protection against fraudulent practices. The Ontario Innkeeper's Act, Hotel Registration of Guests Act, Tourism and Information Act, Fire Safety Act and Ontario Liquor License Act.

HIND 207 / Food Law

A study of Canadian Law as it applied to the food service industry, including the proprietor's responsibilities for his guests and employees, his protection from, and liability in, civil suits. The Liquor License Act, the Fire Safety Act and the Public Health Act.

HIND 208 / Work Experience

The student is introduced to the reality of the food service and hospitality industry by spending one complete day per week as an on-the-job trainee in either a hotel or food complex. The student is able to relate his classroom instruction to actual operating procedures. Guidance and evaluation is given to each student as to his performance and suitability.

HIND 209 / Restaurant Accounting

The function, responsibility and authority of the accounting department in a food service establishment. The "Uniform System of Accounts for Restaurants". Control of accounts payable, accounts receivable, payroll, daily cash flow, credit and bad debts. Fixed assets, liability and capital accounts. Budgeting and break-even analysis. Operating statements, their use and evaluation.

HIND 210 / Personnel Management

Responsibility for personnel management, types of organizational structures. Establishing job requirements through job analysis, job description, job specification, job classification and job evaluation. The hiring function, recruiting, interviewing and selection. Job performance appraisal. The Human Rights Code and The Employment Standards Act.

HIND 211 / Payroll Analysis & Control

Controlling labour costs by a system of forms and procedures, job analysis, work and time schedules, work performance ratios, schedules and sales charts, payroll authorization form.

cont'd

HOTEL INDUSTRY - Cont'd

HIND 211 / Payroll Analysis & Control (Cont'd)

The payroll analysis as a basis for control. The effect of employee morale, absenteeism, turnover and job satisfaction on dollar payroll costs.

HIND 212 / Advertising & Sales Promotion

Analysing the product, competition, market and financing to determine the marketing mix. The advertising budget and agency. The make-up of an advertisement and its media cost. The sales promotion campaigns to promote room sales, group business, tours, food and beverage sales, conventions and conferences. Publicity, good and bad.

HIND 213 / Belcap

BELCAP - Better Environmental Learning through Computer Assisted Procedures - is the name given to a system which enables food and hotel management students to learn by doing, to test, the quality of their decision-making in a simulated hotel/restaurant complex via computer. Computer orientation. Use of terminals and access to data files. Simulated experiments, decisions and changing conditions taken from actual hospitality industry statistics enable the student to project anticipated results by use of the computer.

HIND 214 / Hotel Interior Design

Achieving atmosphere through the use of various furniture period styles, colour schemes, window treatment, wall and floor coverings. Construction specifications for furnishings which determine price. Room decorating and furnishing costs. The guest room layout and floor plan.

HIND 215 / Beverage Cost Control

The two approaches to beverage control, records/systems and employee control. The purchasing, receiving, storing, issuing, and portioning of alcoholic beverages. Pricing the beverage menu and calculating beverage cost percentages. The use of mechanical controls and the potential sales value principle. The beverage department profit and loss statement.

HIND 216 / Management Practice

The student is involved at the department head and management level in the operating of either a hotel or food complex, for two days per week. This allows him/her to implement, under supervision, the 1-1/2 years of classroom and laboratory instruction he/she has already received and also gives the student some practice, under supervision, in managing various areas of a business under actual operating conditions. The student works along side of the department head and is given extensive exposure to the management responsibility.

HEATING

HT 104 / Heating

Theory of oil, gas and electric heating systems. Types, properties and characteristics of fuels and other forms of heat energy. Combustion: types, characteristics, principles of heating equipment, and accessories including steam, hot water, forced air and various types of electric systems. Installation codes and practices.

HT 114 / Heating

Flame detection devices, firing systems, firing sequences and programs, logic diagrams, combustion controls: non-programming and programming. Flue gas analysis and boiler efficiency, boilers, valve train assemblies (C.G.A. & C.S.A. requirements), wiring diagrams, multiple hook-up heating.

Firing of commercial oil and gas burners, wiring and control design for systems in the laboratory, flue gas analysis and conducting boiler testing.

INSTRUMENTATION

INST 100 / Measuring Principles

Theory and construction of mechanical and pneumatic devices for the measurement of pressure, vacuum, temperature, flow of fluids, density, specific gravity, viscosity, etc.

INST 101 / Electronic Instrumentation

Review of fundamentals, electrical pressure, flow level and temperature transducers, indicating and recording potentiometric devices. Radiation and thermoelectricity.

INST 102 / A.C. - D.C. Theory and Lab

Ohm's Law, series and parallel circuits, rheostats and potentiometers, ammeters, voltmeters, ohmmeter, electromagnetism, oscilloscope, generator and motor principles, transformers, reactance, resonance.

INST 103 / Piping & Instrument Lab Techniques

Instruction and shop practice in flaring and bending soft tubing, piping, soft and hard soldering, hand tools, power machine tools. Valves and their installation.

INST 104 / Telemetering

Introduction and history, current, voltage, ratio frequency and impulse methods of telemetering. Multiplex systems, pick-ups, links and channels. Calibration, selection and application of telemetering devices.

INST 106 / Electronics Theory and Lab

Diodes, rectification, filters and doublers, vacuum tubes, zener diodes, SCR's, transistor, FET's, amplifiers.

INST 107 / Electrical Fixed Logic Lab

The study and application of hydraulic, fluidic and electrical circuits as found in typical automated industries.

INSTRUMENTATION - Cont'd

INST 108 / Instrumentation Fundamentals

Introduction to measurement and control. Pneumatic, mechanical and electrical transducers. Basic theories of automatic control.

INST 110 / Instrumentation

Applied electrical and electronic theory, pneumatics and hydraulics. The study and application of devices used in Orthotic-Prosthetics for the testing of anatomical functions and the control equipment related to artificial limbs and braces.

INST 200 / Automatic Control Principles I

Process characteristics, responses of components and systems, energy characteristics, the block diagram, open and closed loops, ratio, cascade, remote-set control loops, development of controller actions, proportional, reset, and rate, tuning a loop.

INST 201 / Final Control Elements

Valve positioners, control valve sizing and their proper application, trim characteristics, seating materials, packing materials, cavitation, flashing, diaphragm materials, split body design, V-ball valves, damper motors, I/P converters, electric and hydraulic valve operators.

INST 202 / Analytical and Environmental Instrumentation

O_2 analysis, combustion, moisture, gas chromatography, ultraviolet and infrared analyzers, spectrometry, pH, conductivity, air and water sampling and analysis, pollution control.

INST 203 / Computer Control Principles I

Fundamentals and application of analog computers, fundamentals and application of digital computers, input-output devices, and data conversion, programming and application to process control.

INST 204 / Applied Solid State Electronics

Power supplies, oscillators, multivi-rators, time control, transistor amplifiers, integrated circuits.

INST 209 / Control Theory and Application

Open and closed loop concepts, lag, capacity, response times, control modes, control systems application and design.

INST 300 / Automatic Control Principles II

An extension and more intensive study of Automatic Control Principles I. Exponential lag, step response and frequency response. Dead time, lag-step and frequency response. Process combination, frequency response method and step response method, controller forms. Process and controller combinations. Elementary system stability, the closed loop and disturbances.

INSTRUMENTATION - Cont'd

INST 301 / Computer Control Principles II

An extension of Computer Control Principles I. Interfacing A to D, and D to A conversions, exposure to software and programming, pneumatic and analog computers, fluidic logic and control.

INST 302 / Systems Design & Fabrication

A systems research design and fabrication project similar to that of first year (INST109). This project however, will be of greater depth and complexity. Grading will be based on originality, relevance to industrial applications, functionality and presentation.

INST 305T / Applied Electronics

Semi-conductors and transistors in depth. Bias stabilization, load lines, coupling, amplification including push-pull amplifiers. Oscillators, timing circuits and multivibrators, strain gauges and their application, photoelectric control and thermistor applications.

INST 303 / Research Seminar

Informal group discussion of topics which fall within the Instrumentation and Control spectrum.

JEWELLERY

JWL 160 / Introduction to Jewellery Making

Planishing; hard soldering; finishing and polishing of precious metals; elementary jewellery repairs; cuttlefish casting; centrifugal casting; models for production methods, etc.

JWL 161 - Goldsmithing

Follows JWL 160 to work in gold.

JWL 162 / Gem-Setting

Follows JWL 160 to work in gem-setting.

JWL 163 / Engraving

Follows JWL 160 and DES 169 to work in engraving.

JWL 164 / Silversmithing

Follows JWL 160 to work in silver.

JWL 165 / Theory

Related to JWL 161-2-3 or 164, as the case may be.

JWL 260 / Jewellery Making

Advanced segment.

JWL 261 / Goldsmithing

Advanced; semester III.

JWL 262 / Gem-Setting

Advanced

JEWELLERY - Cont'd

JWL 263 / Engraving

Advanced.

JWL 264 / Silversmithing

Advanced.

JWL 265 / Theory

Related to JWL 261-2-3 or 264, as the case may be.

JWL 271 / Goldsmithing

Advanced Segment 2 - Semester IV

JWL 361 / Goldsmithing

For experienced goldsmiths only

JWL 362 / Gem-Setting

For experienced gem-setters only.

JWL 363 / Engraving

Intricate and sophisticated patterns for experienced engravers.

JWL 364 / Silversmithing

For experienced silversmiths only

JWL 365 / Theory

Related to JWL 361, 362, 363 or 364, as the case may be.

LAW

LAW 105 / Secretarial Science Related

A summary of our laws of contract, employment, agency, sales of goods, insurance, bailments, real estate, negotiable instruments, partnerships, corporation, bankruptcy, trade marks, business crimes, and torts.

LAW 200/201

This two semester commercial law course is designed primarily for accounting majors who are planning on enrolling in one of the professional accounting associations (RIA or CGA). However, other students will find one or two semesters of this course useful in their business careers.

Topics covered include corporation law, real property law, tax legislation, contracts, labour law, and consumer legislation.

LAW 202 / Procedural Law (Legal Secretary Related)

Practice and procedure before the various courts in Ontario. Rules of court and pleadings. Rules of evidence. Court officials and procedures in court offices and registeries and in other registeries. The role of the lawyer with respect to the courts, to other lawyers, and to the clients.

LAW - Cont'd

LAW 203 / Case Preparation (Legal Secretary Related)

The preparation of a civil or a criminal case for trial. The law library, legal authority and the analysis of reported cases in such fields as contract, tort and agency. The preparation of legal argument. Office practice in such matters as family law, real estate, and briefs before boards and other tribunals.

MACHINE SHOP

MACH 110 / Workshop Technology

Measuring tools and benchwork. Theory and operation of the following machines: drill press, bandsaw, lathe, vertical and horizontal mills, surface and cylindrical grinders. Practical heat treat operations, practical projects involve the construction of tools, jigs, fixtures and machines.

MACH 120 / Toolmaking

Layout procedures, fitting, fastener application, part planning, jig and fixture parts. Milling, welding, grinding and assembly fixtures, drill jigs. Gauges: plug and ring gauges, gap gauges, special gauges. Basic diemaking: die parts and functions, types of press tools, die clearance.

MACH 126 / Non-Traditional Machining

Basic numerical control, electrical discharge machining (E.D.M.) and chipless machining processes.

MACH 127 / Hydraulics and Pneumatics

Systems, valves, pumps, theoretical and practical applications.

MACH 137 / Small Tools and Measurement

The use and care of hand tools such as files, wrenches and screw pitch gauges. The application and care of precision instruments including micrometers, vernier calipers, gauge blocks, plug and ring gauges and dial indicators.

MACH 138 / Lathe and Ancillary Equipment

Centre, tracer and turret lathe operation and theory including set-ups, tools, speeds and feeds, and lubricants.

MACH 150 / Toolmaking

Jig & Fixture Making, ephasis on assembly methods, jig boring, set up and operation. Angular milling, gauge and template making, honing, lapping, form grinding and cutter grinding, basic numerical control.

MACH 155 / Mouldmaking

Construction, theory of operation and manufacture of moulds. The use of Electro Discharge Machines, copying machines, Numerical Control machines, as well as standard machines.

Continued

MACHINE SHOP - Cont'd

MACH 155 / Mouldmaking - Cont'd

Benching tools used in the application of finishing and polishing.

Type of Moulds - Plastic (compression and injection), Die casting and rubber. Emphasis will be placed on all areas of plastic injection and die casting moulds. Extrusion, forging, casting (sand, permanent and lost wax).

MACH 204 / Diemaking I

Punch press theory and operation, press brake theory and operation. Theory development, construction and operation bending, blank, forming, compound, progressive, draw, shaving, lancing, coining and embossing. Cold forming, bulging, swaging, broaching, assembly, sub-press, extruding, curling, side cam, horn. Moulds - Types, construction, operation and manufacture.

MACH 207 / Workshop Technology

Theory and design involved in the practical construction of one of the following types of dies - pierce, blank, cut-off-trim, bending, forming and draw. Punch press, set-up and operation, punch press accessories.

MACH 251 / Diemaking

Engraving and three dimensional milling. Electrical discharge machining. Die theory - types of dies, construction and operation, basic mould theory.

MACH 352 / Metal Cutting Techniques

Standard machining such as jig boring with optics and end measuring, turret and tracer lathe. Tool presetting, rotary table, indexing and sine set-ups. Emphasis on cutting with carbides, utilizing maximum H.P: Electrical Discharge Machining. Automated machines and processes.

MACH 360 / Machine Shop

Tool proving and tryout (gauges, jigs, fixtures and punch press dies). Experiments with cutting tools (rakes and clearances for various types of materials). Die experiments with various types of clearance and part edge development. Bending development. Spot welding - projects will be assigned to suit the interest of the student.

MARKETING

MARK 100 / Introduction to Marketing

An orientation course in modern marketing philosophy and functions. Topics include consumer and industrial market segmentation (identification, needs, market size, trends); interrelationships between customer, company goals, invariable factors and the marketing mix (product, price, distribution and promotion); and marketing research.

MARKETING - Cont'd

MARK 101 / The Sales Aspects of Marketing

Your ability to make a personal presentation of yourself, of your ideas, and of your product or service is a valuable aid in all your business contacts.

This ability is enhanced through andunderstanding of sales planning and sales techniques. Course content includes sales planning and techniques; sales force management and development; recruting and training. Case studies and videotape assist in developing these skills.

MARK 102 / Advertising & Sales Promotion

Designed to relate advertising and sales promotional techniques to the marketing environment. Includes target market definition; attitudes, opinions and beliefs; product analysis; analysis of communications, media and sales promotion leading to written objectives, strategies and media execution; socio-economic aspects; the organizations of advertising.

MARK 200 / Product Planning & Pricing Policy

A study of the strategies leading to new product marketing decisions including product planning and development, product strategies, as well as branding packaging and labelling.

It also includes customer and company considerations in determining product pricing for greater profits.

MARK 201 / Distribution Channels

An examination of distribution channel structure; the problems, objectives, operations, outlook, policies and function of various wholesale and retail organizations; channel conflict; channel selection for the manufacturer. Text, cases, project.

MARK 202 / Marketing Research & Information Systems

Designed for the user of information rather than for the technical research specialist, the course emphasizes the definition of decision-oriented information needs and the interpretation of information results. Sampling and measurement techniques are studied. Text, cases, project.

MARK 205 / Marketing Management

This course, with MARK 206, interrelates elements of the marketing mix that were studied separately in previous semesters, by comparing various strategies, their underlying causes, and relating these to company objectives. MARK 205 pays particular attention to product and price. Text, cases, computer simulation, project.

MARK 206 / Marketing Management II

This course provides an intensive survey of management decisions related to marketing planning and strategy, buyer behaviour, distribution and promotional strategies.

continued

MARKETING - Cont'd

MARK 206 / Marketing Management II - cont'd

The study of realistic company cases will provide the student with a deeper understanding of business problems in these areas.

MARK 207 / Marketing Management III

An interrelated and finanical overview of the Marketing Management function. Emphasis is on the analysis and application of quantitative factors affecting marketing productivity.

MATHEMATICS

MATH 100 / Mathematics

Semester I - Metric and English measurement, linear equations, quadratic equations, logarithms, trigonometry.

Semester II - Trigonometry: oblique triangle, compounded and multiple angles, sum and product of angles, triangles, circles, functional concepts and notations, introduction to series, analytical geometry, differential calculus.

MATH 100T / Mathematics

Trigonometry: functions of any angle, compounded and multiple angles, sum and product formula for angles, radian measure and properties of a circle, properties of trigonometric functions, logarithms and logarithmic equations, variation, progressions introduction to analytical geometry, introduction to differential calculus.

MATH 101 / Mathematics

Review of basic algebra; significant figures; standard notation; slide rule, graphs; linear equations; ratio and proportion; quadratic equations, simultaneous equations; topology of elementary networks; radian measure; trigonometry.

MATH 102T / Technical Mathematics (Electronic Technology Related)

Review algebra; functions and graphs; factoring and fractions; quaratic and equations; binomial theorem; solution to linear equations and systems of equations; review of trigonometric functions; J-operator; vectors and triangles.

MATH 104 / Mathematics

Computation methods; basic algebra; linear equations; trigonometry; oblique triangles; vectors; functions and graphs; simultaneous equations; algebraic factoring; quadratic equations; exponents and radicals; logarithms.

MATH 105 / Technical Mathematics (Graphic Arts related)

Slide rule; logarithms; calculators; practical measurements; practical geometry; ratio and proportions; graphs and nomograms; binary system; justification arithmetic; point system.

MATHEMATICS - Cont'd

MATH 107 / Technical Mathematics

Semester I - Square root, right angle triangle, algebraic equations, ratio and proportion.

Semester II - Exponent laws, linear equations, radical equations formulae, simultaneous equations, graphs, logarithms.

MATH 110 / Mathematics

Basic arithmetic processes, interest, trade discounts, food costs, weights and measures, metric system, ratio and proportion, graphs, recipe quantities, portion costs and selling price calculation, calculating portion sizes and amounts to purchase.

MATH 113 / Business Mathematics

Semester I - Discounts: markups, margin, markdowns. Interest: present value, discounting negotiable instruments, partial payments. Installment pruchases: true interest rate on installment purchases. Methods of computation.

MATH 114 / Business Mathematics

Fundamental algebraic operations, geometric sequences, logarithms, graphs, interest, annuities, statistics, amortization and sinking funds, bonds, depreciation.

MATH 120 / Applied Computer Programming

Introduction to time sharing; algorithms; elements of basic programming; printing statements; functions and sub-routines; basic statements and rules.

MATH 133 / Mathematics

Basic arithmetic; square root; simple interest; loans, financing; mensuration; ration and proportion; applied geometry; fundamental algebra.

MATH 136 / Mathematics

Semester I - Basic arithmetic;mensuration; ratio and proportion; fundamental algebra.

Semester II - Geometric figures; fundamental geometric construction; trigonometry; sine and cosine laws; oblique triangles, logarithms, shop calculations.

MATH 143 / Mathematics

Semester I - Number systems; whole numbers, common fractions, decimal -ractions; per cent, units of measure.

Semester II - Operations with decimals and fractions, measurement; linear; square; cubic; basic geometry; percent simple interest.

MATH 147 / Mathematics

Semester II - Quadratic function, trigonometry; A combination of topics selected from the following options: series, geometry, statistics, computer principles, analytic geometry.

MATHEMATICS - Cont'd

MATH 150 / Mathematics

Basic Arithmetic; ration and proportion and applications; fundamental algebraic operations. Indices & esponents; slide rule; standard notation; logarithms; practical geometry; weights & measures; graphs - straight line law; algebra - linear & quadratic equations; trigonometry and applications.

MATH 163 / Core Mathematics (Business Related)

Whole numbers; common fractions; decimal fractions; percent; invoices and extensions.

MATH 175 / Shop Mathematics

Metric conversion. Application of arithmetic, algebra, geometry and trigonometry, applicable to toolmaking problems.

MATH 200 / Mathematics

Semester I - Analytical geometry, differential calculus, differentiation, practical applications.

Semester II - Integration, the definite integral: areas under curves, volumes. Introduction to differential equations. Practical applications.

MATH 200T / Mathematics

Semester I - Cartesian co-ordinates, line segments inclination, parallel perpendicular lines, straight line distance from a line to a point, circle parabola ellipse, hyperbola tangents to curves, translation of axis second degree equations, polar co-ordinates, polar equations inequalities, linear programming.

Semester II - Limits, slope of a tangent deriviative, increasing and decreasing functions, derivative of a polynomial, derivative of a product and quotient; chain rule, implicit functions, derivatives with respect to time, maximum and minimum, the differential in definite integral, constant of integration, definite integral, trapesoidal rule for approximate areas, area under a curve, successive integration, volume of integration, centroids, moments of inertia, differential equations.

MATH 200 T / Mathematics (Instrumentation Technology related)

Introduction to differential and integral calculus. Applications to related rates; maxima and minima; areas and volumes. Introduction to probability and statistics. Basic concepts of Boolean algebra. Introduction to time sharing; basic programming and problem solving by computer.

MATH 201 / Mathematics (Electronics related)

Review of algebra; functions and graphs; factoring and fractions; quadratic and higher degree equations; binomial theorem; solutions to linear equations and systems of equations; review of trigonometric functions; J-operator; vectors and triangles.

MATHEMATICS - Cont'd

MATH 201T / Mathematics

Equations of higher degree; progressions, series and binomial theorem; plane analytic geometry; polar co-ordinates and graphs; limits; slope of tangents; derivative; introduction to differentiation.

MATH 202 / Mathematics (Electronics related)

Trigonometric functions of combined angles; properties and graphs of trigonometric functions; plane analytic geometry; polar co-ordinates and graphs; limits; slope of tangents; derivative; introduction to differentiation and integration.

MATH 202T / Mathematics (Electronic Technology related)

Properties of trigonometric functions and inverse trigonometric functions; derivatives of polynomials, products, quotients, and powers of functions; tangents and normals; related rates; application to wave analysis; maximum and minimum values; higher derivatives; derivatives of trigonometric and inverse trigonometric functions; derivatives of logarithmic and exponential functions; hyperbolic functions and identities; inverse hyperbolic functions; differentiation of hyperbolic and inverse hyperbolic functions; introduction to integration.

MATH 205 / Mathematics (Graphic Arts related)

Fundamental algebra; fundamental trigonometry; simple and compound interest; basic bookkeeping; profit and loss sheets; cheques, cash records, and statements; taxation; purchasing; financing; estimating.

MATH 207 / Business & Bookkeeping

Semester I - Business Mathematics. Fundamental operations: Percent, interest, trade discounts, calculations of interest charges, bank drafts.

Semester II - Bookkeeping. The balance sheets, classified financial statements,specified journals.

MATH 215 / Statistics

The elements of statistics as applied to business. Treatment of numerical data: graphical representation, the analytic method. Frequency distributions, measures of central tendency and spread. Elementary probability theory. Introduction to time series and forecasting. Index numbers and their application.

MATH 275 / Shop Mathematics

Extension of toolmaking shop mathematics to more complicated shop problems, including die calculations. Force, work, power, velocity, torque, horsepower and mechanical efficiency of machines.

MATHEMATICS - Cont'd

MATH 300 / Mathematics (Electrical Technology related)

Differential calculus: functional notation, gradients, limiting value, differentiation from first principles, maxima and minima, differentiation of products and quotients of trigonometric functions with application to angular velocity and acceleration, simple harmonic motion, and electrical problems; integral calculus: relationship between differentiation and integration, the definite integral. Application of calculus to problems encountered in related technology.

MATH 300 / Mathematics (Instrumentation Technology related)

Advanced applications of the calculus; introduction to differential equations. A survey of statistical concepts applied to decision ma-ing. Boolean algebra applied to switching theory. Computer problem solving projects applied to the technology.

MATH 300T / Mathematics (Statistics)

Elements of statistics. Variables. Variables and graphs, frequency distribution, measurements of central tendency, standard deviation and other measures of dispersion, moments, skewness and normal curve, elementary probability theory, chi-square test, curve fitting and method of least squares. Analysis of measurement, nature of samples, sampling distribution, making estimates from samples. Application to survey data.

MATH 301T / Mathematics (Survey related)

Explanation of matrices and their arithmetic operations, systems of linear equations, matrix multiplication, equivalent and inverse matrices, non-singular matrices, determinants; expansion of a determinant, products of a determinant, computer application to least squares adjustments (chi-squares), data storage and automatic plotting of survey data using matrices.

MATH 301T / Mathematics (Electronic Technology related)

Indefinite integral; power rule; movement of constants and transforms; definite integral; change of limits; area under curves; general power formula; basic logarithmic form; exponential form; basic trigonometric form; hyperbolic form; inverse hyperbolic form; standard form tables for integration; integration by parts; by change of independent variable, by partial fractions; by successive reduction, by substitution, by practical methods, functions of more than one variable; derivative of a function of more than one variable; total differentiation of a function; multiple integrals; MacLaurin series; Taylor's series; operations with series; computations by expansions; L'Hospital's Rule; Cauchy's integral test; alternating series; power series.

MATH 305 / Analytical Geometry

Basic concepts, co-ordinate systems, lines and related topics. The plane, the cycle sphere, cylinder and cone. The ellipse, ellipsoid, the parabola and parboloid. The hyperbola and the hyperboloid. The general equation of the second degree. Graphs.

MATHEMATICS - Cont'd

MATH 316 / Elementary Statistics

An introduction to statistics: organization and presentation of data measures of central tendency; dispersion; frequency distribution; sampling; confidence limits; hypothesis testing; regression analysis; experimental design.

MATH 365 / Shop Mathematics

Vector force diagrams, calculations for balancing loads. Development of the involute curve. Compound angles. Limits and tolerances. Estimating cutting times. Various die calculations.

MATH 375 / Shop Mathematics

(Mouldmaking), compound angles, shrinkage calculations, draft angle calculations. Trigonometry, geometry and algebra problems.

MATH 400 / Mathematics

Differentiation of exponential and logarithmic functions with applications related to Electrical problems; standard methods of integration, such as substitution, trigonometric identities, partial fractions and integration by parts; radius of curvature, lengths of curves; expansion series; Taylor's and MacLaurin's Theorem; differential equations; simple differentiation equations of the first and second order: use of complex numbers in electrical or electronic technology.

MECHANICS

MECH 100 / Mechanics

Semester I - Statics: concurrent co-planer force systems; resultant forces, equilibrium forces, structural forces, centres of gravity and centroids, moments of intertia. Work, energy, and power.

Semester II - Machines: velocity, acceleration, displacement, laws of motion, Galileo's equations, inertia force, angular motion, work, energy, power, impact.

MECH 102 / Mechanics

Concurrent and non-concurrent coplanar forces; force systems; moments; equilibrium; friction; work, energy, power; machines; velocity; acceleration; angular displacement, centripetal acceleration; centripetal forces; conservation of momentum.

MECH 103 / Mechanics and Mechanisms

Techniques and mechansim analysis; graphical analysis of motion; friction, lubrication, and bearings; pulleys, gears, and gear-trains; cams, clutches, linkages, governors and speed controls; basic design of mechanisms.

MECHANICS - Cont'd

MECH 103T / Mechanics and Mechanisms

Techniques and mechanism analysis; graphical analysis of motion; friction, lubrication and bearings; pulleys, gears and gear-trains; cams, clutches, linkages, governors and speed controls; basic design of mechanisms. Design and application of mechanisms to specific situations.

MECH 110 / Mechanics of Materials

Semester I - Statics review: forces in structures, stress and deformation, stress and strain. Yong's modulus of elasticity. Riveted and welded joints, torsion.

Semester II - Centroids, moment of inertia. Beams, stresses in beams, deflection of simple beams, thick and think wall cylinders, combined stresses. Point and distributed loadings, columns.

MECH 114 / Strength of Materials

Review of basic principles; properties of materials; stress, strain and deformation; centroids, moments of inertia; centroids, moments of inertia; bending moments; torsion, combined stresses.

MECH 115 / Mechanics of Fluids

Semester I - Properties of fluids: capillarity, viscosity, surface tension, etc. Hydrostatic force and pressure. Centre of pressure. Buoyancy and floatation.

Semester II - Fundamentals of fluid flow - Benoulli's theorem, continuity, orifices, nozzles and weirs. Fluid flow in pipes - Moody chart. Fundamental principles of hydrodynamics. Pumps: types and characteristics. Dimensional analysis.

MECH 202 / Machines and Mechanisms

Techniques of Mechanism Analysis; Graphic Analysis of Motions; Friction and Lubrication; Levers, Pulleys, Gears and Gear Trains, Couplings, Bearings, Clutches, Cams, Linkages, Governors, and Speed Controls; Basic design of Mechanisms.

MECH 210 / Mechanics of Materials

Semester I - Shear forces, binding moments in beams, cantilevers and continuous beams, reinforced concrete design, structural steel design use of tables.

Semester II - Selection of sections beams, stanchions, columns, plate girders, riveted, bolted and welded connections, steel roof truss design, joint details.

MECH 302T / Mechanisms and Materials (Electronic Technology Related)

Properties of materials; stress, strain, and elastic constants; moments of inertia; bending moments; torsion; beam stresses and deflection; Euler strut; column and strut stability; fatigue and fatigue testing; analysis of mechanisms, vibration analysis.

MECHANICS - Cont'd

MECH 312T / Mechanics of Materials (Electronic Technology related)

Properties of Materials; Stress, strain, and elastic constants; moments of inertia; bending moments, torsion; beam stresses and deflection; euler strut; column and strut stability; fatigue and fatigue testing; analysis of mechanism; vibration analysis.

MEDICAL TECHNOLOGY (ORTHOTICS-PROSTHETICS)

MED 100 / Introductory Anatomy & Biomechanics

Functional anatomy of the human body including skeletal structure (osteology), muscle systems (myology), blood circulation system (angiology), nervous system (neurology) and functions of digestion, respiration and excretion. Basic anthropometric data, physical properties of tissues, analysis of forces acting on the skeletal structures and torques developed around body joints.

MED 200 / Intermediate Anatomy

The functional antomy of the human body including study of the anatomical joints in relation to orthotic-prosthetic hardware. Pathological studies of the skeletal structures including indications for amputation.

MED 201 / Introductory Physiology

Skin disorders and cell structure. Blood, its composition and functions. The functional muscular system, circulators and respiratory.

MED 202 / Introductory Pathology

Diseases of the body including degenerative erosion of the joints. Methods of treatment in relation to external and internal prostheses. Cardiovascular system.

MED 300 / Advanced Anatomy and Kinesiology

Prosthetic/orthotic design in relationship with body conformation, skeletal and musculature contours. Maintenance of high standard of fitting practices in static and dynamic alignment. Electrical diagnosis, check-out, and finalization of prosthetic/orthotic components.

MED 301 / Physiology

Systems of the body co-related with other courses. The effects of amputation on nervous, arterial, veinous, circulatory and respiratory systems. Surgical techniques. Atrophy and hypertrophy.

MED 302 / Pathology

Bone and cellular structure, weight bearing areas. Diseases and their effects. Pain, symptoms, causes and indications for surgery. Blood supply, protein, living and dead cellular structures, skin.

METALLURGY

MET 100 / Metallurgy

Atomic theory of metals: metallic states, grain formation and growth, metal deformation, mechanical properties, heat treatment of metals. Iron-carbon equilibrium diagram. Types, properties and uses of cast iron, steel and non-ferrous. Aluminum, nickel, copper, magnesium lead and its alloys.

MET 130 / Metallurgy I

An introduction to the base metals commonly used in the watchmaking and jewellery trades. A more complete coverage in the precious or "noble" metals, namely the mining, refining and preparation from the raw ores to the finished metals as used by the craftsmen.

An introduction to the acids and liquids commonly used in cleaning, soldering, etc., in each of these affiliated trades.

MET 166 / Metallurgy

A special module covering the metallurgy of precious metals used in Jewellery manufacturing - Basic.

MET 266 / Metallurgy

Ditto - Advanced - Semester III and IV

MET 200 / Metallurgy

A comprehensive study of the metals and alloys used by the dental technician. A study is made of the metallurgical principles involved in structures and states of metals and metallic compounds, with emphasis on gold and its alloys, silver, platinum and copper. A study is also made of base metal alloys.

MET 375 / Practical Metallurgy for Mouldmaking

The selection and various heat treatments for tool steels and non-ferrous alloys suitable for the construction of moulds and dies which are to be used in the forming of plastic, rubber, ceramics, glass, and metals. The recognition and solution of basic metallurgical problems, which may be caused by abrasion, corrosion, erosion, heat checking, heat conduction, high temperature hardness and strength.

Properties of alloys which may be case, forged or extruded. Theory of polishing and electro-plating. Introduction to non-destructive testing.

NUMERICAL CONTROL

NC 126 / Numerical Control

Numerical control, definitions, history of machine tools, advantages and application of NC axis, absolute and incremental systems, point to point and continuous path systems, programming, tooling, tape preparation, binary systems, machine set-ups. Practical applications of two axix machining.

NUMERICAL CONTROL - Cont'd

NC 208 / Numerical Control

Review basic progeamming procedures. Computer assisted programming using "ADAPT" language and XLO post-processor. Lathe programming word address, absolute system, practical assignments.

NC 300 / Numerical Control- Part I

N/C theory - systems, dimensioning; controls, programming, for point to point systems - milling, drilling reaming, tapping and boring. Programming for continuous path systems. Set-up and operation of an "XLO" milling machine and a Pratt & Whitney starturn lathe.

NC 310 / Numerical Control Part II

Basic fundamentals of computer assistance for part programming using the "Adapt" language with time sharing terminals.

NC 320 / Numerical Control Part III

Advanced Numerical Control- using all systems and equipment. Planning, pro-ramming, tape preparation, tape editing, tape tryout and proving onN/C machines.

NUTRITION

NUT 100/ Nutrition

Nutritional needs for good health. The "Canada Food Rules". Composition of foods and functions of the five groups of nutrients; vitamins, minerals, proteins, fats, and carbohydrates. The function of roughage and water; digestion and metabolism. Modified diets to treat various conditions, variations in caloric content, in texture and consistency, and in nutrient composition.

NUT 200 / Therapeutic Nutrition

Assessment of nutritional needs with special focus on the patient and his perspective. Nutritional analysis and plan of care with the problem-solving approach. Process recording as a means of evaluating the interaction with a patient. Applied nutrition: clinical case studies.

OFFICE PRACTICE

OP 100 / Typewriting

To develop speed and accuracy with emphasis on proper touch typing techniques; introduction to basic centering, tabulation, business letter styles and preparation of manuscripts and proofreading.

OP 101 / Typewriting and Office Practice

To further develop speed and accuracy on electric typewriters and, in addition, to complete more advanced theory projects.

OFFICE PRACTICE - Cont'd

OP 110 / Dental Office Practice

Additional to the further development of typing skills, emphasis will be placed on the basic skill of bookkeeping as it relates to the dentist office. Other areas covered are reception duties, filing, grooming, etc.

OP 114 / Office Practice

The first semester will be devoted to developing the student's skill in the manipulation of the typewriter. In the second semester, the student will concentrate in familiarizing herself with the business office aspects of a dental practice and her duties and responsibilities therein. In so doing, she will be required to apply the typewriting theory mastered in the first semester. Instruction covers bookkeeping, correspondence, banking, appointment planning, credit and collection, patient records and accounts.

OP 200-201 / Office Practice

In addition to further skill development, to familiarize the student with the role of the secretary in business organizations and her duties, including communications, filing, banking and finance, meetings and conferences, travel arrangements, etc.

OP 202-203 / Legal Office Practice

Additional to further development of typing skills, emphasis will be placed on the preparation of legal instruments involving court documents, real estate, divorce papers and partnerships and corporations, as well as receptionist, accounting and secretarial duties involved in running a legal office.

OP 204-205 / Medical Office Practice

To further develop typing skills with emphasis on handling the daily routine of a doctor's office including appointments, correspondence, patient files and medical forms, OHIP and Workmen's Compensation forms, and the assignments involved when part of a hospital dicta typing pool.

PATTERN MAKING

PAT 140 / Apparel Drafting I

Use of patterns and designs as a management tool.

PAT 141 / Apparel Pattern I

Elementary pattern design (women's and children's wear). A systematic method of pattern cutting by drafting directly "on the flat" (i.e. on paper). 1) Drafting the basic foundation pattern in manufacturing sizes to a "price line". 2) Fit and alter patterns. 3) Basic principles of styling; design sketches.

PATTERN MAKING - Cont'd

PAT 142 / Apparel Design I

Styling, line, proportion. Research, colour, co-ordinating colour and texture.

PAT 143 / Apparel Pattern Drafting II

Intermediate pattern design (women's and children's wear) embellishing PAT 141 with PAT 142 and successive stages.

PAT 144 / Fashion Illustration I

Elementary course in Fashion Art - drawing figures and clothing (still and from life) to show fashion, style design, fabric texture, in preparation for apparel pattern drafting or advertising layouts.

PAT 151 / Apparel Pattern Drafting III

Sequel to PAT 141 and 143 - designing a garment from sketch or original idea and drafting pattern for commercial use - includes creative styling of coats, suits, sportswear, dresswear; advanced styling.

PAT 152 / Apparel Design II

Styling, research, textiles, copies, size grading up and down.

PAT 153 / Apparel Pattern Drafting IV

Advanced design, colour, texture, draping - integrating all areas of apparel design and pattern drafting to bring out fashion creativity in projects.

PAT 154 / Fashion Illustration II

Commercial applications in fashion art - creative sketching, line, colour, concepts (fashion).

PAT 241 / Advanced Pattern Drafting V

To include style changes and variations of original design; formal wear; theatre/T.V. design introduction.

PAT 242 / Commercial Pattern Marker

Duplicator; miniature markers; optimum use of fabric; introduction to computer pattern grading and markers.

PAT 243 / Fashion Research

Tracing trends - co-ordination of colour and fabric with design - textures - attitudes.

PAT 244 / Fashion Illustration III

Specialising in use of Fashion Illustration in the media - commercials - ads - display cards - backdrops.

PAT 245 / The Advanced Application of the Design Function for Theatre Arts Costuming

Historical eras of dress.

PATTERN MAKING - Cont'd

PAT 251 / Advanced Pattern Drafting VI

Grading techniques; computer pattern grading principles; plotting co-ordinates; grading rules for programming.

PAT 252 / Apparel Design III

Advanced principles of line form and design as applied to the covering of the human figure; draping; European techniques of creating fashions.

PAT 253 / Apparel Product Design IV

Technology and manufacturing factors affecting economics of relationship between creative designs and competitive production of these styles; price lines and influence on design.

PAT 254 / Fashion Illustration IV

Continuation of applications in the media.

PAT 262 / Apparel Design IV

Continuation of PAT 252, especially creating using draping.

PAT 341 / Apparel Pattern Drafting VII

Designing and producing a line - projects and practice designed to develop knack of predicting style change and consumer demand; adjustments needed in design room and on plant floor before showroom display and sales.

PHYSICAL DISTRIBUTION

PHD 100 - Introduction to Physical Distribution

This is a survey course dealing with the business areas involved in the actual movement of goods and products from the source, point of production or seller to the user, point of consumption or buyer. The business areas or major components of the physical distribution system include economic geography, communications, order processing, inventory control. Production scheduling, industrial packaging and traffic or freight management.

PHD 102 / Physical Distribution Analysis

Deals with managerial tools of analysis and decision making. Areas covered include decision trees, PERT, CPM, transportation models, linear programming, probability theory, forecasting, budgeting, cost analysis techniques, computer applications, scheduling and systems analysis.

PHD 103 / Warehousing

Modern warehousing, functions, types: public, private; equipment, costs, mechanization and automation, principles of merchandise location.

PHYSICAL DISTRIBUTION - Cont'd

PDH 104 / Purchasing

Analysis and application of methods of value-conscious buying by the corporate and institutional buyer. Quality, quantity, make or buy, sources of supply, price, flow of information.

PHD 201 / Inventory Control I

Inventory goals, classifications, physical stock control, control techniques, when and how much to order.

PHD 202 / Physical Distribution Management I

Tools of analysis and decision making in the area of physical distribution, decision trees, PERT, CPM, transportation models, linear programming, forecasting, cost analysis techniques, computer applications.

PHD 203 / Traffic I

Different modes of transportation: air, sea, rail, truck, pipeline. Choices, cost estimates, rates, services. Documents.

PHD 205 / Physical Distribution Management II

Follows PDM I. Problem solving, applications, on-job case situations. Emphasis on integrated systems.

PHD 206 / Inventory Control II

Follows Inventory Control I. Emphasis on more sophisticated analytical, mathematical, and graphical control techniques and approaches.

PHD 207 / Traffic II

Follows Traffic I. Further expansion and development of areas in Traffic I. On-job case situations.

PHYSICS

PHYS 100 / Applied Physics I

Semester I - Fluid mechanics; heat and thermometry; heat effects; heat measurement; changes of state; heat transfer.

Semester II - Thermodynamics; heat engines, refrigeration; sound; nature of light.

PHYS 100T / Applied Physics I

Fluids: properties of fluids, hydrostatics, hydraulics. Heat and thermometry: temperature scales, types of thermometers, absolute temperature, effects of heat; expansion of solids, liquids and gases; units of heat, specific heat, change of state, heat transfer, gas laws. Sound: measurement of sound, sonar effects, Doppler effect, acoustics. Light: nature of light, properties of light, optics, lenses, reflection, refraction, wave optics, speed of light, the electromagnetic spectrum, polarization.

PHYSICS - Cont'd

PHYS 101 / Physics

System of units; heat; heat transfer; vibration and waves; light; ray optics; illumination; physical optics; colour; sound.

PHYS 104 / Applied Physics

This course if orientated toward the fundamentals of the food processing industry.

Semester I - Precision of measurement, matter, mechanics, heat, sound.

Semester II - Light, electricity, magnetism, electronics, atomic energy.

PHYS 105 / Applied Physics (Graphic Arts Related)

Heat, scales and quantities; expansions; specific heat; heat transfer; humidity; specific gravity and density; surface tension; gas laws; osmosis and diffusion; friction and viscosity; elasticity; light; optical instruments; reflection and refraction; photo-electrics; effect of infrared and ultra violet rays on fading surface and metallic colour; spectrum colours; colour mixing; luminosity and brightness; electrostatics and anti-static devices; flash point and safety devices.

PHYS 110 / Physics

Semester I - Heat and temperature, effects of heat, temperature, scales, heat units, specific heat, calorific value of fuels, elements, mixtures and compounds. Basic chemistry of combustion, chemical composition and combustion rates of fuels, transfer of heat.

Semester II - Fluid mechanics: fundamentals of electricity.

PHYS 121 / Applied Physics

Semester I - Heat and temperature; properties of matter; chemistry of combustion; heat transfer.

Semester II - Force,work, power, simple machines, laws of friction, fundamentals of electricity.

PHYS 130 / Applied Physics

Semester I - Types of forces, vector diagrams, simple machines, work, energy, power, hydraulics.

Semester II - Heat and temperature; fundamentals of electricity; Hooke's Law.

PHYS 132 / Applied Physics

Semester I - Properties of matter; hydrostatics; atmospheric pressure, gauge and absolute pressure, barometry, pressure at depth. Hydraulics: Pascal's Law, hydraulic devices, pneumatic devices.

continued

PHYSICS - Cont'd

PHYS 132 / Applied Physics - Cont'd

Semester II - Heat and Thermometry: Gas laws; work, energy, power, machines; properties of light; nature of sound; properties of materials; forces.

PHYS 133 / Applied Physics

The atmosphere; nature of water; strength of materials; properties of heat, work, power energy, basic electricity.

PHYS 134 / Applied Science

Semester I - Measurement; density; heat and temperature; surface tension and viscosity; Elements of electricity; light; simple machines.

Semester II - Properties of matter; physical and chemical changes, atomic theory, properties of acids, bases and salts, pH measurement; organic chemistry.

PHYS 135 / Applied Physics

Properties of matter; concept of force; hydraulics, pressure and density, hydraulic and pneumatic devices, electrical fundamentals, codes.

PHYS 136 / Applied Physics

Semester I - Heat and Temperature: effects of heat, temperature scales, heat units, specific heat, calorific values of fuels.

Semester II - Structure of Matter: elements, mixtures and compounds. Basic chemistry of combustion, chemical composition of fuels, combination rates of fuels, transfer of heat.

PHYS 137 / Applied Physics

Semester I - Work, energy and power; simple machines, laws of friction, heat and temperature.

Semester II - Basic electrical fundamentals, Ohm's Law, electrical circuits, electromagnetism, thermocouples, transformers, generators, motors, capacitors and capacitance.

PHYS 138 / Applied Physics

Semester I - Classification and properties of matter; gas laws, properties of petrochemicals; solvents and refrigerants; properties of soaps and detergents; corrosion.

Semester II - Density; force, properties of solids; strength of materials; heat effects; hydraulic devices, simple machines.

PHYS 139 / Physics

Semester I - Language of science; measurement; density; heat and temperature; the atmosphere; light.

Semester II - Fundamentals of chemistry; mixtures and substances; atomic structure; acids and bases; chemical equations; pH; metallurgy; chemistry of photography and papermaking.

PHYSICS - Cont'd

PHYS 200 / Modern Physics

Semester I - The spectrum; atomic physics, Bohr atom line spectra, waves and particles, atomic model, chroedinger wave equation, solid state physics, crystalline solids, classification by structure and by energy.

Semester II- Physical states; alloy structure; theory of semiconductors; nuclear physics, relativity, nuclear particles, nuclear energy.

PHYS 201T / Modern Physics (Electronic Technology related)

Heat; scales and quantities; expansions; specific heat; heat transfers; mechanical equivalent of heat; propogation of light; illumination and photometry; mirrors and lenses; photoelectrics; dispersion, interference and differation; sound waves; light and colour; infrared and ultra violet rays; radio waves.

PHYS 202 / Thermodynamics

Semester I - Energy transformations; definition of terms, the PV diagram, laws of thermodynamics; the gas laws, Joule's equivalent.

Semester II - Indicator diagrams; thermal efficiency, ideal engine cycles, engine efficiency, heat transfer, entropy; changes od state, isobaric, isochoric, isothermal, adiabatic, polytropic.

PHYS 210 / Applied Physics

Semester I - Principles of hydraulic and pneumatic devices and systems.

Semester II - Principles of electrical systems and operating principles of electrical devices. Fundamentals of computer analysis, codes and safety.

PHYS 202T / Modern Physics (Electronic Technology Related)

Velocity: acceleration; momentum; energy; gravitational, magnetic, and electric fields; radiation and planchis constant; atomic structure; electron spectra; Balmer's Law; Bohr's and Sommerfield Theory; DeBroglie equation; nucleus proton; neutron; atomic theory; Milikan measurement of Electron charge; nuclear stability; classification of particles; ionization; Geiger tubes; cloud chamber; X-Rays,diffractions, Compton effect; Electron Optics; reactors, radioactivity; fission; fusion; radiation; absorption; detectors; lasers.

PRECISION INSTRUMENT TECHNIQUES

PIT 100 / Horological Techniques

Care and use of small tools. Dressing up and sharpening screwdrivers and tweezers. Files and filing techniques. Filing projects. The watchmaker's lathe and motor. Basic operation. Tool sharpening and basic turning. Intermediate turning. Grinding and polishing. Burnishing. Use of various lathe attachments. Precision finishing of projects. Threading and taping. Introductory hairspring manipulations.

PLASTICS

PL100 / Thermoplastic Materials

Fundamentals and characterization of polymers. Introduction to basic resins. Engineering thermoplastics and natural polymers. Identification of plastics and elastomers by simple tests.

PL101 / Thermoplastic Materials

Fundamentals and characterization of polymers.

PL102 / Materials Thermoplastics

Introduction to basic resins. Engineering thermoplastics and natural polymers. Identification of plastics and elastomers by simple test. Fluorine polymers. The new plastics. Reinforced thermoplastics and elastomers.

PL103 / Thermoset Materials

History and Introduction to polyester and epoxy resins. Reinforcements and fillers. Composites. Strength of material definitions.

PL104 / Thermoset Materials

History and introduction to polyester and epoxy resins. Reinforcements and fillers.

PL105 / Thermoset Materials

Composites. Strength of materials definitions. Properties, chemistry, curing and quality control for thermosetting resins. Polyester, epoxies, alkyds, phenolics, silicones, amino resins.

PL110 / Thermoplastic Processes

Basic theory and application of thermoplastic processes. Mixing and dispersing, extrusion, injection moulding, calendering, blow moulding, sheet forming, sealing and welding, coating and machining.

PL111 / Thermoplastic Techniques:

Basic theory and application of thermoplastic processes. Mixing and dispersing, operation of extrusion, injection moulding, calendering and blow moulding equipment. Manufacturers' literature. Design of plastic parts and processing equipment, materials selection, selection of a process. Part design, injection mould design (plus Course DR100 - Technical Drawing).

PL112 / Thermoplastic Techniques:

Practical machine moulding - extrusion, injection, blow moulding, tubular and cast film making, extrusion laminating, sheet production and filament extrusion. Design for tube extrusion and tubular film. Design for flat film and sheeting. Design for profiles. Design for blow moulding. Multi-screw extruders and miniature extruders. (Plus Course DR100 - Technical Drawing).

PLASTICS - Cont'd

PL113 / Thermoset Processes

Theory and application of reinforced thermosetting plastic processes. Pattern and mould making, hand lay-up, spray-up, filament winding.

PL114 / Thermoset Techniques

Theory and application of reinforced thermosetting plastic processes. Pattern and mould making, hand lay-up practice. Design characteristics for glass fibre reinforced plastics. Throwaway and plaster tooling. (Plus Course DR100 - Technical Drawing).

PL115 / Thermoset Techniques

Spray-up and filament winding. Matched die, compression and transfer moulding. Injection moulding, reinforced plastics mould and tooling design. Wooden and metal moulds. Cost estimating. (Plus Course DR100 - Technical Drawing).

PL120 / Thermoplastic Design

Design of plastic parts and processing equipment. Materials selection. Selection of a process. Part design, injection mould design, extrusion die design, design of moulds for hollow formed articles, auxiliary equipment.

PL123 / Thermoset Design

Design characteristics for glass fibre reinforced plastics. Throwaway and plastic tooling. Reinforced plastic moulds and tooling. Wooden and metal moulds. Cost estimating.

PL125 / Plastics Fundamentals

Materials, processes, design, thermoplastics, and thermosets.

PL200 / Thermoplastic Materials

Fluorine polymers. The new plastics. Reinforced thermoplastics and elastomers. Material testing. Product testing. Material selection.

PL201 / Materials Thermoplastics

Material testing. Product testing. Material selection.

PL203 / Thermoset Materials

Properties, chemistry, curing and quality control for thermosetting resins. Polyesters, epoxies, alkyds, phenolics, silicones, amino resins, furanes and polyurethanes.

PL204 / Materials Thermosets

Furanes and polyurethanes.

PL210 / Thermoplastic Processes

Advanced theory and application of thermoplastic processes. This course covers the same processes as listed in PL 110, but in greater depth.

PLASTICS - Cont'd

PL211 / Thermoset Processes

Theory and application of moulding thermoset materials. Matched die moulding, compression, transfer, and injection moulding.

PL212 / Techniques Thermoset

Theory and application of cellular plastic moulding and casting. Materials and designs for flexible moulds.

PL220 / Thermoplastic Design

Advanced design-process selection, mould and die design, product design. Auxiliary equipment, jig and fixture design. Cost estimating.

PL223 / Thermoset Design

Mould and die design, machine design. Cost estimating.

PL316 / Plastic Thermosets

Theory and application of thermosetting materials and processes: hand lay-up spray-up, filament winding, foam dispensing and compressing moulding. Forming and fabricating of thermoplastic sheets,rods and tubes. Design considerations - product and mould. Mould making materials.

PL317 / Plastic Thermoplastics

Theory and application of thermoplastic materials and processes: extrusion, injection moulding, blow moulding and calendering. Design of thermoplastic parts and processing equipment. Material properties and selection.

PRECISION MEASUREMENT

PM100 / Precision Measurement

Dial gages and indicators, surface plates, micrometers and verniers, gage blocks, optical comparator. Angular measurement, checking threads. Co-ordinate measurement machine, basic tools - telescope gages, small hole gages, steel rule, vernier protractor, height gages, squares, inside micrometer, depth micrometer, sine bar.

PM110 / Precision Measurement

History and basic principles: basic instrumentation, dial gauges and test indicators, surface plates, micrometers and verniers, gauge blocks, optical instruments and testing. Surface finish screw threads, gears. Angular measurement, fixed gauges, air gauging, autometrology. Co-ordinate measurement.

PROSTHETICS

PROS 101 / Materials & Shop Techniques

A practical study of the hand and machine fabrication of components from ferrous and non-ferrous metals, plastics, leather, fabrics and plaster; reinforcing materials, hand lay-up procedures, vacuum laminations;

continued

PROSTHETICS - Cont'd

PROS 101 / Materials & Shop Techniques - cont'd

fastening, polishing and buffing of plastics; machine sewing, manufacture of plaster moulds and models, including use of plaster bandages, as well as types and applications of adhesives and other fastening devices.

PROS 200 / Orthotic and Prosthetic Techniques

Casting, moulding, modifications, laminations, fabrication, installation of hardware and jigs in preparation for use by patients, including prosthesis and orthosis for upper and lower extremity deficiencies.

PROS 203 / Field Practice

Participation in various clinics, amputees assessment, formulating prescriptions, working with other members of the rehabilitation team. Visits to recognized establishments and working in a practical environment.

PROS 300 / Advanced Orthotic and Prosthetic Techniques

Modular prosthetics, fracture casting, immediate post-operative fitting techniques. Advanced prosthetic/orthotic casting and modification procedures. Fitting problems, and new materials as they are introduced.

PROS 301 / Physical and Occupational Therapy (1st Semester only)

Patient treatment with considerations given to levels of activity, age, occupation and eventual rehabilitation into society.

PROS 302 / Research Project

The project will enable the student to apply his theoretical knowledge and practical ability to the design, fabrication, testing and acceptance of prosthetic/orthotic components to meet the requirements and standards of the profession.

PROS 303 / Field Service

Involvement with patients for the actual fitting, design and fabrication from prescription with consideration given to clinical assessment, in conjunction with certified member of prosthetic/orthotic profession.

PSYCHOLOGY

PSY 160 / General Psychology

A study of human motivation, perception, and learning processes; theories of personality development, nature of intelligence and psychological testing; meaning of elementary statistical terminology related to the study of children.

PSYCHOLOGY - Cont'd

PSY 161 / General Psychology

This course will examine the basic concepts and theories of psychology, covering such topics as learning, motivation, individual differences, etc. These concepts will then be applied to practical issues in business and personal life, helping the student to understand himself and others.

PSY 162 / Social Psychology

This course, offered to students who have completed an introductory course in psychology, will examine the basic principles of social psychology, such as group dynamics, group behaviour, organizations, etc. These principles will be applied to issues in modern society and industry.

PSY 200 / Psychology

A general introductory course to the study of human behaviour with consideration given to human motivation, perception, and the learning process. Theories of personality development, the concept of roles and the nature of intelligence will be discussed.

PSY 201 / Business Psychology

Formal and informal organizations. Consumer motivation. Consumer analysis, depth interviews, attitude and opinion surveys. Theory of psycho persuasion.

PSY 202 / Psychology

Clinical approach to the new amputee. Basic understanding of some of his problems and how to deal with them. Environment and family acceptance of amputees.

PSY 203 / Rehabilitation

Introduction to social and vocational rehabilitation. Social roles of the disabled; processes of vocational rehabilitation. Functions of an Amputee Clinic between medical and vocational rehabilitation. Sources of funds available to purchase appliances: one's own resources, government programs and voluntary agencies. Training, role, function, etc. of welfare (social work) personnel involved in vocational rehabilitation.

PSY 204 / Industrial Psychology and Salesmanship

A study of the application of psychological methods and principles in business and industry. Personnel selection, factors involving efficiency. Factors in selling process: buying habits, motives. The pre-approach, the approach, the presentation, the close.

PSY 205 / Applied Psychology

As related to patient management. Procedures involving children and adults in the reception area, operatory, and business office.

SANITATION

SAN 100 / Sanitation & Hygiene

Cause and prevention of food-borne illnesses. Sanitary maintenance of all areas of food service establishments. The student is instructed in the proper handling of food, beverages, equipment, and other materials in storage. Sanitation through proper dishwashing equipment.

SAN 300 / Sanitation and Pollution

Organization and supervision of a sanitation program in the food industry. Importance of and how to schedule a program. The chemistry of cleaning, detergency and types of cleaning compounds. Methods of disinfection and sterilization, mechanical and/or chemical cleaning methods, CIP and ultra-sonic methods. Sanitary aspects of buildings and equipment, water treatment, and supply. Waste treatment and disposal. Insects, rodents, etc. and their control. Inspection techniques and reporting.

Lecture = 2 hours per week.

SMALL BUSINESS MANAGEMENT

SBM 132 / Small Business Management

Business Mathematics; Basic Bookkeeping: journals, ledgers, financial statements, entries, special journals. Business organization; business law; sales and advertising.

SEWING

SEW 141/151 / Sewing Machine Operation

Single-needle lockstitch flat-bed machine - 240 hour Performance Objective Program leading to speed, stamina, rhythm in sewing on professional machine - use of steam iron on trolley (120 hours First Semester).

SEW 142 / Serger Machine

Special module (30 hour) for students reaching SEW 141/151 objectives in less than 240 hours. Also available for part-time students during regular classes.

SEW 143 / Blind-stitch machine - special module (30 hours) as for SEW 142.

SEW 144 / Button-hole and button-sew machines (30 hours)

SEW 145 / SEW 141 with addition of methods, time and motion studies.

SEW 151 / As SEW 141 - Final 120 hours of Performance Objective Program for part-time students during regular classes.

SEW 155 / SEW 141 - Continuation of methods, time and motion studies, standard data - especial consideration of work methods, placement of plies, etc.

SEW 161 / Operator Training Piece Work/Time Work - operator orientation - incentives - motivation - recruiting - vestibule operations.

SEW 241 / As DRES 248 for factory supplies, threads, equipment, accessories, justification of purchases.

SEWING - Cont'd

SEW 242 / Special operations using sewing machines - special attachments for specific objectives.

SEW 244 / Cutting fabric for easiest sewing - markers, layout, notching, ticketing, ironing, etc.

SEW 245 / Methods and time studies on sewing machine operators.

SEW 246 / Study of standard data

SEW 252 / Special sewing machines - numerical controlled machines - customized, etc.

SHORTHAND

SH 100

In this semester the theory of the system is thoroughly covered and a good foundation is laid for the development of speed in the following semesters.

SH 101

This semester is mainly devoted to developing the technique of taking dictation at speeds of up to 100 wpm and transcribing it in mailable form.

SH 200 & 201

These two semesters continue developing the ability to write shorthand at increasing speeds, up to 130 wpm and transcribing the material in mailable form.

SH 202 & 203 /Secretarial Science Legal

Particular emphasis is placed on developing the ability of the writer to handle the kind of terminology that is likely to be encountered in a legal office, at an acceptable writing speed.

SH 204 & 205 / Secretarial Science Medical

Particular emphasis is placed on developing the ability of the writer to handle the kind of terminology that is likely to be encountered in the medical profession, at an acceptable writing speed.

SH 302 & 303 / Shorthand and Transcription

As well as developing the ability of the student to write shorthand at speeds of up to 200 wpm, time is also devoted to single and multi-voice dictation as is likely to be encountered in the courtroom, conference room or in parliamentary debate.

SOCIOLOGY

SOC 100 / Sociology (Nursing and Dental Related)

Sem I — An introductory course emphasizing the family and youth - tradition, dissent, conformity, rebellion.

Sem II — The community, the Church, and the school; isolation and belonging; social structures; faith, spiritual loss, new religions; text versus social lessons; aims and disappointments.

Sem III — Work - satisfaction, creativity, play, leisure; career structures. Pain - fear, physical and psychological responses; understanding personal pain and that of others.

STRUCTURAL STEEL

STR 122 / Structural Detailing

The preparation of design and detail drawings of standard structural steel reinforced concrete and timer construction.

STR 123 / Structural Design

Reinforced concrete design; foundations and retaining walls; structural steel design; structural members and frames; detail parts and connections.

STR 212 / Structural Steel Problems and Drawing

Drafting office routines, shop practice, detailing and related design of the components of steel construction.

STR 213 / Reinforced Concrete Problems and Drawing

Drafting office routines, shop practice, detailing and related design of the components of reinforced concrete construction.

STR 214 / Project Drawing

Project drawing from design sketches; specifications and standards to develop complete sets of design; detail and structural drawings.

SURVEYING

SURV 100 / Survey Computations and Drafting

Introduction to elements of surveying and survey drawing, Ontario land system, survey calculations, interpretation of legal boundary notes.

SURV 100T / Survey Computations and Drafting

Introduction to elements of surveying and survey drawing, Ontario land systems, survey calculations and interpretation of legal noundary notes.

SURV 101 / Plane Surveying

Fundamental principles of surveying and the use of survey instruments and equipment, field procedures for topographical surveying and basic construction layout.

SURVEYING - Cont'd

SURV 110 / Surveying

A basic course in the fundamentals of plane surveying, utilizing the various survey instruments and equipment.

SURV 200 / Survey Computations and Drafting

Survey plans and calculations for land exchange, easement, expropriations, route locations and earthwork quantities.

SURV 200T / Survey Computations & Drafting

Survey plans and calculations for land exchange, easement, expropriations route locations and earthwork quantities.

SURV 201 / Advanced Plane Surveying

The field work and equipment required to produce good quality 3rd order control over a large area, using geodetic co-ordinates; the adjustment and computation of the results by regular methods and by computer; the drafting of the final plan.

SURV 201T / Advanced Plane Surveying

The field work and equipment required to produce a good quality 3rd order, control over a large area using geodetic co-ordinates; the adjustment and computation of the results by regular methods and by computer; the drafting of the final plan.

SURV 202 / Photogrammetry

Theory and photogrammetric mapping, use of aerial photographs in surveying, mapping procedures.

SURV 203 / Practical Astronomy

Polaris observation for meridian, determination by astronomic observation of longitude, time latitude, sun observation, use of tables, calculation procedures.

SURV 204 / Legal Surveying

History and development of land registration system, methods of registering, legal transfers and general procedures, field trips to registry, land titles, and township offices.

SURV 300T / Cartography

The compelation of all survey information for the preparation of producing the printed map on the various mediae.

SURV 301T / Advanced Plane Surveying

Special problems encountered in field and equipment pertaining to geodetic and urban control surveys. Utilizing conventional & electro equipment.

SURV 302T / Photogrammetry

The production of plans and maps using air-photo equipment.

SURV 303T / Practical Astronomy

Calculating of latitude, time, longitude from stellar. Observations. Accurate calculation of bearings, transformation and relationship of co-ordinate systems, bearing reference and convergence.

SURVEYING - Cont'd

SURV 304T / Legal Surveying

The various types of official surveys in Ontario under the Survey Act, common law principles pertaining to boundaries and surveys.

TOOL DESIGN

TD 110 / Metrology

History and basic principles: basic instrumentation, dial gauges and test indicators, surface plates, micrometers and verniers, gauge blocks, optical instruments and testing, surface finish screw threads, gears, angular measurement, fixed gauges, air gauging, autometrology.

WATCHMAKING

WACH 130 / Theory of Watchmaking

History of timekeeping instruments; celestial basis for time measuring; time zones. Units of linear measurements and measuring instruments. Basic principles of turning, filing, grinding and polishing, and burnishing.

WACH 131 / Watchmaking Skills

Care and use of basic tools. Screw plate exercises. Basic turning exercises. Files and filing techniques. Turning in brass and steel. Making balance staffs.

WACH 132 / Theory of Watchmaking

Balance wheels and balance staffs, truing and poising, removing broken staffs. Watch hairsprings. History of colleting, truing and vibrating principles. Introductory hairspring theory, principles of isochronism, flat and overcoil hairsprings. Clock construction. Clock escapements. Pendulums.

WACH 133 / Watchmaking Skills

Staking and removing balance staffs. Basic hairspring manipulations. Colleting, truing, vibrating and overcoiling techniques. Clock repairing. Trouble shooting and various aspects of servicing alarm, mantel and wall clocks.

WACH 231 / Watchmaking Skills

Advanced turning operations, alterations and fitting of parts. Jewelling: bezel type and friction type. Escapement matching. Hairspring manipulations. Colleting, truing, vibrating and overcoiling of watch hairsprings.

WACH 232 / Theory of Watchmaking

Gearing theory and calculations. Theory of watch construction. Watch timing and adjusting. Automatic winding mechanisms. Calendar mechanisms. Other types of watch escapements. Waterproofing.

WATCHMAKING - Cont'd

WACH 233 / Watchmaking Skills

Fittings of stems and crowns, round and fancy crystals. Replacing mainsprings. Watch overhaul and lubrication. Adjustint manipulations; adjustments to positions, adjustments to isochronism, adjustments to mean time. Practical testing and waterproofing.

WACH 330 / Theory of Watchmaking

Principles of precision adjustments of chronometres. Detent escapements. Helical balance springs. Complete phase calendar mechanisms. Perpetual calendar watches.

WACH 331 / Watchmaking Skills

General overhauling techniques. Precision watch timing and adjusting. Overhauling of perpetual calendar and other types of complicated watches.

WACH 332 / Theory of Watchmaking

Chronograph watches: principles of operation, types, adjustments, types of dials. Automatic-chronographs and calendar watches. Principles of operation and adjustment. Electric and electronic watches: with balance wheels, with tuning forks, with quartz crystal oscillators.

WACH 333 / Watchmaking Skills

Overhauling and adjustments of various types of chronographs and automati-chronograph watches. Servicing of all types of electric and electronic watches.

WELDING

WELD 100 / Manual Welding Processes

Further study of oxy-acetylene and manual metallic arc processes and their application to the welding of sheet, plate, pipe and structural sections. Welding techniques as applied to a variety of metals and joint configurations. Weld inspection and testing.

WELD 101 / Gas Tungsten Arc Welding

Description, characteristics, and application of G.T.A. welding and auxiliary equipment and supplies. Preparation procedures and welding techniques as applied to various metals. Joint Design. Purging procedures. Operational difficulties and their solutions.

WELD 102 / Semi-automatic and Automatic Welding Processes

Theory and operation of semi-automatic and automatic versions of metal inert gas welding, CO_2 short circuiting, CO_2 flex cored wire, open arc, submerged arc, electroslag, plasma arc, resistance and stud welding processes. Study of equipment requirements and operational trouble shooting. Selection of filler wires and shielding gases. Welding procedures and weld testing.

WELDING - Cont'd

WELD 103 / Industrial Welding Applications and Shop Procedures

Fabrication procedures involving the use of various types of welding and metalworking equipment. Application of manual, semi-automatic, and automatic welding equipment to production. Process and equipment selection. Quality control and codes. Estimating, shop and production planning. Use of weld inspection equipment to perform destructive and non-destructive tests. Supervision.

WELD 147 / Welding

Safety precautions, handling and using oxy-acetylene equipment, welding terminology, assembly and disassembly of equipment, flame adjustment, definitions of various oxy-acetylene processes, basic weld joints, fusion welding various metals, theory of oxy-acetylene cutting, brazing and braze welding, soldering methods: equipment and materials, general procedures, torch soldering, soldering copper method and electric soldering iron and gun.

WELD 148 / Welding

History of welding; basic fundamentals of such welding processes as oxy-fuel gas, manual metallic arc, gas tungsten arc, gas metal arc, submerged arc, electro-slag, plasma arc, electron beam and resistance welding; weldability of metals; industrial applications of welding processes; joint and metal preparation; distortion and stress principles of oxy-fuel gas cutting; weld faults in relation to poor design. Demonstrations (with some student practice) of oxy-acetylene, manual metallic arc, gas tungsten arc, gas metal arc, arc air gouging, submerged arc and resistance welding.

WELD 149 / Oxy-Acetylene Welding, Brazing & Cutting

Theory: safety precautions, terminology. Assembly and disassembly of equipment, care of equipment. Types of flames and their uses. Joint design. Weld faults. Repair of casting,handling of oxygen and acetylene. Testing of welds and operators. Practice: Fusion welding and braze welding. Cutting with manual and semi-automatic equipment.

	Page
Academic Upgrading	11
Accommodation, Living	19
Additional Expenditures	14
Admission Procedures	11
Admission Requirements	12
Advanced Standing	12
Applicants from Foreign Countries	13
Athletics & Recreation	18
Bookstores	19
Cafeterias	19
Campus Facilities	19
Campuses	10
Coding Usages, Significance of	21
College, The	10
Counselling Services	18
Equivalent Standing	14
Fees, Student Activity	19
Fees, Tuition	13
Financial Assistance	18
Glossary	17
Grade Point Average (GPA)	16
Grading	15
Health Centres	18
Identification Cards	13
Libraries	20
Living Accommodation	19
Mature Students	12
Mutual Responsibility Agreement	13
Ontario Health Insurance Plan (OHIP)	19
Ontario Manpower Retraining Programs (OMRP)	14
Parking	20
Placement	19
Priority of Admissions	12
Probationary Status	11
Program Evaluation	15
Programs of Study	10
Promotion of Students	16
Registration Dates	15
Report, The Student	16
Student Activity Fees	19
Student Organizations	19
Student Report, The	16
Student Services	18
Technology Program, The 2700-Hour	20
Transfer Credits	12

* denotes an Ontario Manpower Retraining Program (OMRP)

\# denotes an apprenticeship program

Numbers preceding program titles designate minimum educational prerequisites in terms of Ontario grades: 0 indicates that there is no stated educational prerequisite for that program. The letters gd (i.e., graduation diploma) preceding a program title indicate a post-secondary program.

Capital letters represent the name of the campus where the program is offered:

C: College Street Campus
CL: Casa Loma Campus
K: Kensington Campus
T: Teraulay Campus

Answers to inquiries may be obtained by dialling (416) 967-1212 and asking for "Information".

				Page
T & C	0	*	Academic Upgrading (Basic Training for Skill Development BTSD)	22
T	gd	-	Accounting	47
T	gd	-	Acoustics Technician	63
K	gd	-	Addiction Counsellor	23
CL	10	#	Air Conditioning & Refrigeration Worker	139
CL	gd	-	Air Conditioning Technician	30
K	0	*	Apparel Design & Pattern Drafting	103
K	gd	-	Apparel Technology	104
CL	10	*	Appliance Servicing	31
K	8	#	Baker	139
K	10	*	Baking Pre-employment	121
K	9	#	Barber	139
K	10	*	Bartending	121
CL	10	*	Blueprint Reading (Architectural)	31
CL	8	*	Blueprint Reading for Welders	76
CL	8	#	Brick & Stone Mason	139
T	gd	-	Business Administration	48
T	gd	-	Business Administration-General	49
CL	10	*	Business Equipment Servicing	76
T	10	*	Business Machines	50
T	10	*	Business Machines & Bookkeeping	50
CL	10	#	Carpenter	139
CL	8	*	Carpentry - General	31
CL	8	#	Cement Mason	139
T	0	*	Certified Building Custodian	138
K	10	#	Chef	139
K	10		Chef Training Pre-employment	122
K	gd	-	Child Care Worker	25
CL	gd	-	Civil Engineering Technician	32
T	10	*	Clerk Typist	51
CL	gd	-	Coatings Technician	77
T	0	*	Colour Television	71
T	10	*	Commercial Accounting	51
T	10	*	Commercial Art	128
T	8	*	Commercial Clerical	52
T	10	*	Commercial Dicta-Typist	52
T	0	*	Commercial Refresher	52
T	10	*	Commercial Stenographer	52
K	8	*	Commercial Vehicle Driving	138
CL	gd	-	Concrete Technician	33
CL	gd	-	Construction Technician	35
K	10	*	Cook Training	122
T	gd	-	Court Reporting	53
K	gd		Creative Fashions (Apparel)	107
K	8	*	Custom Dressmaking & Alterations	113
K	gd	-	Day Care Worker	26
CL	gd	-	Dental Assistant	27
CL	gd	-	Dental Technician	28
CL	gd	-	Denture Therapy	24
CL	gd	-	Design Technician - Electrical	65
K	gd	-	Dietary Services Administration	123
K	10	*	Dining Room Service	124
CL	10	*	Drafting (Architectural)	36
CL	10	*	Drafting - Mechanical Engineering	86
CL	10	*	Drafting Refresher	36

			Page
CL	gd	Drafting Technician - Architectural	37
CL	gd	Drafting Technician - General	38
CL	gd	Drafting Technician Mechanical Services	39
CL	gd	Drafting Technician - Structural	40
CL	8 - *	Drywall Taper	36
CL	10 - #	Electrician (Construction & Maintenance)	139
CL	gd	Electrical Technician	67
CL	gd	Electrical Technologist	69
T	gd	Electronic Data Processing	54
T	10 - *	E.D.P. I (Keypunch)	55
T	10 - *	Electronics General	71
T	10 - #	Electronics Mechanic (Industrial Control)	139
T	gd	Electronics Technician	72
T	gd	Electronics Technologist	74
T & C	0 - *	English as a Second Language	135
T	0 - *	Film Imposition & Surface Preparation for Typographers	128
CL	gd	Fitness Instructor	137
K	gd	Food Administration	125
K	gd	Food Processing Technology	126
K	10 - *	Fur Business & Manufacturing Techniques	114
K	gd	Furniture Renovation Technician	115
K	0 - *	Furniture Refinishing & Repair	117
K	0 - *	Furniture Upholstery & Repair	117
CL	10 - #	Glazier & Metal Mechanic	139
T	gd	Graphic Arts (Printing Technician)	129
T	gd	Graphic Design Technician	131
K	9 - #	Hairdresser	139
K	0 - *	Hairstyling for Barbers	118
CL	10 - *	Heating Technician	41
K	10 - *	Hospital Orderly	29
K	gd	Hotel-Motel Administration	127

			Page
K	10 - *	Industrial Instrumentation Mechanic	78
K	gd	Industrial Instrumentation Technician	79
K	gd	Industrial Instrumentation Technologist	80
K	0 - *	Industrial Power Sewing	118
T	10 - *	Inventory Control	55
CL	10 - #	Ironworker	139
CL	gd	Jewellery Arts	119
CL	10 - *	Lathe Operator	82
CL	10 - #	Lather	139
CL	gd	Machine & Product Design	83
CL	10 - *	Machine Shop Practice	82
CL	10 - #	Machinist	139
T	gd	Marketing	56
CL	gd	Materials Handling Design	85
CL	10 - *	Mechanical Engineering Drafting	86
CL	10 - #	Millwright	139
K	10 - *	Nursery Aide	29
		Nursing	136
T	10 - *	Offset Printing	132
T	0 - *	Offset Printing for Letterpressmen	132
CL	10 - *	Oil Burner Servicing	41
CL	gd	Orthotic-Prosthetic Techniques	89
CL	10 - #	Painter & Decorator	139
CL	8 - *	Painting & Decorating (Architectural)	42
T	0 - *	Photo Composition & Paste-up Assembly for Typographers	133
T	0 - *	Photo Reproduction for Typographers	133
T	gd	Physical Distribution	57
CL	8 - #	Plasterer	139
CL	gd	Plastics Technician A	91
CL	gd	Plastics Technician B	92
CL	gd	Plastics Technician C	93
CL	10 - #	Plumber	139
CL & K	gd	Precision Instrument Techniques	95
CL	gd	Processing Piping Design	96

				Page
T	10	#	Radio & Television Service Technician	139
CL	10	*	Refrigeration & Air Conditioning	42
CL	0	*	Residential Metal Siding Installation	42
K	10	#	Retail Meat Cutter	139
K	10	*	Retail Meat Cutting	124
T	gd	-	Sales	58
T	10	*	Screen Printing	134
T	gd	-	Secretarial Science -General	59
T	gd	-	Secretarial Science -Legal	60
T	gd	-	Secretarial Science -Medical	61
CL	10	#	Sheet Metal Worker	139
K	10	-	Ship's Cooks	135
T	10	*	Signwriting	134
CL	10	#	Sprinkler & Fire Protection Installer	139
CL	8	*	Stationary Engineering	43
CL	10	#	Steamfitter	139
T	gd	*	Stenographic Refresher	55
CL	10	#	Structural Steel Draftsman	139
CL	gd	-	Survey Technician	44
CL	gd	-	Survey Technologist	45
CL	10	-	Thermoplastic Operator (Forming & Fabricating)	88
CL	10	-	Thermoplastic Set-up Man (Machine Moulding)	88
CL	10	-	Thermoset Operator (Machine Moulding)	87
CL	10	-	Thermoset Operator (Hand Lay-up)	87
CL	gd	-	Tool & Die Design	97
CL	10	#	Toolmaker	139
CL	gd	-	Toolmaking Technician	99
K	0	*	Tractor Trailer Driving	138
T	0	*	Typing Refresher	55

				Page
CL	10	#	Watch Repairer	139
CL	gd	-	Watchmaking	100
K	10	*	Welder Fitter	101
K	0	*	Welder Fitter Refresher	101
K	8	*	Welding Operator	102
K	gd	-	Welding Specialist	102

THE GEORGE BROWN COLLEGE OF APPLIED ARTS & TECHNOLOGY

PROGRAMS 1974 - 1975

A D D E N D A

The following additions and amendments are published with a view to updating the George Brown College Calendar 1974-75.

A. EQUIVALENT STANDING

Top of page 15, please make the following amendments:

British Columbia:	Grade 12
New Brunswick:	Grade 12
Alberta:	Grade 12
Saskatchewan:	Grade 12
Manitoba:	Grade 12
Nova Scotia:	Grade 12
Prince Edward Island:	Grade 12
Newfoundland:	First Year Memorial University
Quebec:	12 years of schooling, comprising either 12 years at Quebec schools or 11 years at Quebec schools plus the first year of either the program at a College of General and Professional Education (CEGEP) or the first year of the collegial program offered at a Quebec university.

One year of approved schooling in another Canadian province, beyond the levels stated above, is considered to be the equivalent of the Ontario grade 13.

B. PROGRAM TITLE CHANGES

Page	Code	Old Program Title	New Program Title
22	AS540	Grades 1 to 4	Academic Upgrading A
22	AS541	Grades 5 to 8	Academic Upgrading 1
22	AS542	Grades 9 to 11	Academic Upgrading 2
22	AS543	Grades 11 to 12	Academic Upgrading 3
31	AR549	General Carpentry	General Carpentry - Advanced
41	AR541	Oil Burner Servicing	Oil Burner Service
42	AR590	Residential Metal Siding Installation	Residential Siding Installer
55	B574	Typing Refresher	Typist Refresher
71	EL571	Colour Television	Colour Television Upgrading
101	EN554	Welder Fitter Refresher	Welding Fitter Refresher
139		Carpenter	Carpentry - Regular
139		Machinist	Machinist/Machine Trades
139		Radio & TV Service Technician	Radio & TV Serviceman
139		Air Conditioning & Refrigeration Worker	Refrigeration & Air Condition Mechanic
139		Toolmaker	Tool & Die Maker

C. STATIONARY ENGINEERING

Page 43, please make the following amendments:

4TH CLASS

1st Term — 20 Weeks

Course	Modular Area	Hours	No. of Modules
STAT530	Power Plant Theory	300	16
STAT535	Power Plant Practice	200	--
STAT546	Electrical	20	1
STAT560	Language & Communication	20	1
STAT550	Mathematics	20	1
STAT556	Physics	20	1
STAT540	Instrumentation & Controls	20	1
		600	21

3RD CLASS

2nd Term — 20 Weeks

STAT531	Power Plant Theory	340	13
STAT536	Power Plant Practice	100	--
STAT547	Electrical/Electronics	40	2
STAT561	Language & Communication	20	1
STAT551	Mathematics	20	1
STAT557	Physics	20	1
STAT541	Instrumentation & Controls	20	1
STAT570	B.P.R. & Strength of Materials	40	2
		600	21

D. GRAPHIC ARTS

Page 199, please insert the following after GR225:

GR300 / Typographic Design & Layout
A review of basic typographic design principles and copy fitting problems followed by production of comprehensive layouts, some of which are used in the later typesetting course. Assignments will involve the designing of a set of business stationery, a six page brochure; and, a number of tabular items. Each student will be required to formulate a house style in keeping with current trends.

GR301 / Computer Peripherals & Typesetting
The main object of this course is to develop the ability to apply computers to typesetting. It will involve the basic terminology of the computer field and discussions of both general purpose and special purpose devices as they are used in composition. Topics include hardware, software, storage, programing, limitations, advantages and disadvantages of input and output machines in typesetting, and a survey of the field.

GR302 / Paste-Up & Film Assembly
Paste-up is taught at the beginning of this course but the emphasis is on the assembly of positive film. Two-colour forms are assembled using a register pin system and mylar base. The level of work reaches that of the leading typesetting houses. In addition, a contact printing and headlining is taught.

GR303 / Photocomposition Tape Input
Input will be by raw tape perforator, programmable keyboard, and counting keyboard. Correction will be by CRT terminal. In the counting keyboard session comparisions will be made to the monotype system. Output will be Photon 713-10/20, Mergathaler VIP, and Linofilm Quick. A high standard of accuracy is demanded of students and the level of work will be in the order of tabular, shape, and catalogue typesetting. The final part of this course will be programming.

GR304 / Advanced Keyboard Techniques
The operation and theory of more sophisticated counting keyboards; the uses of programmable keyboards; the advantages and disadvantages of such systems as the Monotype Keyboard and the Dvorak Keyboard. The student will be expected to produce several items of work using both the Monotype and the AK1-PC1 120.

GR305 / Photomechanical Reproduction
A course designed for students with line and halftone experience. Covers direct and indirect colour separation procedures by various methods. Colour correction by photographic masking. Basic Colour theory. Making screened positives and contrast control, using CC filters. Includes the operation and control of film processors, densitometers, enlarger and related equipment.

GR306 / Photomechanical Reproduction
Covers the study of tone reproduction for black and white and colour printing. The manipulation of tones taking into consideration the characteristics of the press, paper, plate, film and processing conditions and the copy to achieve quality reproduction on the printed sheet. Practical application of tone reproduction study using camera, enlarger and contacting.

GR307 / Photomechanical Reproduction - Gravure
Introduction to reproduction for the gravure printing process including making of continuous tone negatives and positives, halftone negatives and positives with the gravure screen for monotone printing. Transparency masking and colour separation procedures, continuous tone and screened negatives and positives for colour. Use of carbon tissue in transferring the image to copper, etching the copper and proofing resulting plates.

GR308 / Photomechanical Reproduction on the HCM C286 Scanner
Prerequisite is completion of GR305 or equivalent trade knowledge. Principles of scanning, E & D curve and other sensitometer applications. Gradation and Color Computer, Screening, Proofing, Future Trends

GR302 / Paste-Up & Film Assembly
Paste-up is taught at the beginning of this course but the emphasis is on the assembly of positive film. Two-colour forms are assembled using a register pin system and mylar base. The level of work reaches that of the leading typesetting houses. In addition, a contact printing and headlining is taught.

GR303 / Photocomposition Tape Input
Input will be by raw tape perforator, programmable keyboard, and counting keyboard. Correction will be by CRT terminal. In the counting keyboard session comparisions will be made to the monotype system. Output will be Photon 713-10/20, Mergathaler VIP, and Linofilm Quick. A high standard of accuracy is demanded of students and the level of work will be in the order of tabular, shape, and catalogue typesetting. The final part of this course will be programming.

GR304 / Advanced Keyboard Techniques
The operation and theory of more sophisticated counting keyboards; the uses of programmable keyboards; the advantages and disadvantages of such systems as the Monotype Keyboard and the Dvorak Keyboard. The student will be expected to produce several items of work using both the Monotype and the AK1-PC1 120.

GR305 / Photomechanical Reproduction
A course designed for students with line and halftone experience. Covers direct and indirect colour separation procedures by various methods. Colour correction by photographic masking. Basic Colour theory. Making screened positives and contrast control, using CC filters. Includes the operation and control of film processors, densitometers, enlarger and related equipment.

GR306 / Photomechanical Reproduction
Covers the study of tone reproduction for black and white and colour printing. The manipulation of tones taking into consideration the characteristics of the press, paper, plate, film and processing conditions and the copy to achieve quality reproduction on the printed sheet. Practical application of tone reproduction study using camera, enlarger and contacting.

GR307 / Photomechanical Reproduction - Gravure
Introduction to reproduction for the gravure printing process including making of continuous tone negatives and positives, halftone negatives and positives with the gravure screen for monotone printing. Transparency masking and colour separation procedures, continuous tone and screened negatives and positives for colour. Use of carbon tissue in transferring the image to copper, etching the copper and proofing resulting plates.

GR308 / Photomechanical Reproduction on the HCM C286 Scanner
Prerequisite is completion of GR305 or equivalent trade knowledge. Principles of scanning, E & D curve and other sensitometer applications. Gradation and Color Computer, Screening, Proofing, Future Trends

GR310 / Film Imposition & Printing Surface Preparation
The emphasis at this level is on four colour process stripping procedures including the preparation of flats containing chokes and spreads, fake colour and colour separation. Colour charts are prepared by the student incorporating the various screen angles and tints. Further experience will be gained in manual step and repeat methods and machine photocomposing.

GR311 / Film Imposition & Printing Surface Preparation
This course provides for the practical application of all previous courses on this subject in the areas of contacting, stripping, photocomposing and job planning. It will also include platemaking problems and their solution and pre-press colour proofing methods.

GR312 / Film Imposition & Printing Surface Preparation
This is a combination of camera, stripping and platemaking that allows the student a number of choices that include completing a project through camera, stripping and platemaking, or performing practical work in any one or more of these areas.

GR313 / Technical Project
A single block of training where a student completes a project from conception through design, composition, camera, stripping and platemaking, to press and bindery. It must be at least two colours involving half-tones, duo-tones and tints, photocomposition and bindery operations.

GR314 / Die Cutting & Embossing
Following a refresher or instruction on platen and cylinder press as required, the course will cover die manufacturing processes; die-cutting and creasing; perforation slot cutting; plate sinking; hot and cold embossing and a demonstration of foil stamping.

GR316 / Machine Printing Two-Colour Offset Press (Advanced)
Register, cylinder arrangements, application of Ph, pressroom chemistry, paper, ink, colour matching and densitometer application. Projects run during this course will include two-colour, multi-colour and process colour work.

GR317 / Machine Printing Rotogravure (Advanced)
Exercises in two-colour rotogravure printing.

GR318 / Machine Printing Flexo (Advanced)
Projects in flexographic printing on various substrates.

GR319 / Multi-color Press Projects
GR320 / Process Color Press Projects
Special individual printing projects selected in cooperation by the student and instructor to develop the student's capability on particular presses. Special attention will be paid to colour control and all aspects of importance in commercial work.

GR321 / Press Theory and Maintenance
The maintenance of each press taught in third year and the theory of various dampening systems used in offset lithography is stressed to ensure proper corrective action for press problems.

C. STATIONARY ENGINEERING

Page 43, please make the following amendments:

4TH CLASS

1st Term — 20 Weeks

Course	Modular Area	Hours	No. of Modules
STAT530	Power Plant Theory	300	16
STAT535	Power Plant Practice	200	--
STAT546	Electrical	20	1
STAT560	Language & Communication	20	1
STAT550	Mathematics	20	1
STAT556	Physics	20	1
STAT540	Instrumentation & Controls	20	1
		600	21

3RD CLASS

2nd Term — 20 Weeks

STAT531	Power Plant Theory	340	13
STAT536	Power Plant Practice	100	--
STAT547	Electrical/Electronics	40	2
STAT561	Language & Communication	20	1
STAT551	Mathematics	20	1
STAT557	Physics	20	1
STAT541	Instrumentation & Controls	20	1
STAT570	B.P.R. & Strength of Materials	40	2
		600	21

D. GRAPHIC ARTS

Page 199, please insert the following after GR225:

GR300 / Typographic Design & Layout
A review of basic typographic design principles and copy fitting problems followed by production of comprehensive layouts, some of which are used in the later typesetting course. Assignments will involve the designing of a set of business stationery, a six page brochure; and, a number of tabular items. Each student will be required to formulate a house style in keeping with current trends.

GR301 / Computer Peripherals & Typesetting
The main object of this course is to develop the ability to apply computers to typesetting. It will involve the basic terminology of the computer field and discussions of both general purpose and special purpose devices as they are used in composition. Topics include hardware, software, storage, programing, limitations, advantages and disadvantages of input and output machines in typesetting, and a survey of the field.

GR322 / Cold Type Mark-up
This course is to introduce students to various methods of mark-up currently in use. It begins with hot-metal mark-up and then progresses to cold-type mark-up, the course culminating in mark-up for computer typesetting. The kind of difficulties experienced in the use of different output units will be discussed. Students will be encouraged to develop a mark-up system of their own.

GR325 / Bindery - Programmable Guillotine
GR326 / Bindery - Rotobinders
GR327 / Bindery - Advanced Folding 26x40 Baum
GR328 / Bindery - Gatherers
GR329 / Bindery - Stitchers and Sewing Machine
GR330 / Bindery - Foil Stamping
The above six courses constitute the Technical Major in Bindery. In courses GR325, GR326, GR327, GR328 and GR329 work covers advanced techniques in set-up and trouble shooting. Any two courses constitute a minor option in Bindery. Equipment taught includes 26x40 Baum Folder, Smyth #12 Booksewer, Pony 5 Rotobinder, Muller Automatic Stitcher, Seybold Citation Programmable Guillotine and the IMP Model 3/60B semi-automatic foil stamping machine.

GR350 / Graphic Arts Administrative Processes
Cost estimating and production control techniques are covered in a case study approach with a dummy corporation establishment. This subject prepares a student to enter estimating and production control.

GR360 / Quality Control
To major in Quality Control during third year, six technical blocks of training time are devoted to special quality control projects in the areas where the student anticipates employment.

The George Brown College
of Applied Arts and Technology
P.O. Box 1015, Station B,
Toronto, Ontario, M5T 2T9, Canada
Telephone (416) 967-1212

Key to Campus Locations

C College Street
507 College St.

CL Casa Loma
37 Dartnell Ave.

G Toronto General
Hospital Campus
90 Gerrard Street W.

J St. Joseph's Hospital
Campus
50 Sunnyside Avenue

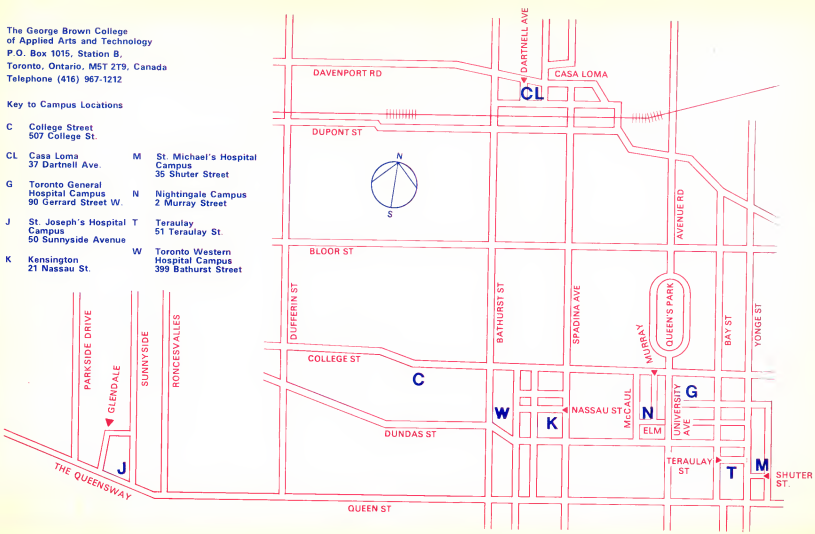
K Kensington
21 Nassau St.

M St. Michael's Hospital
Campus
35 Shuter Street

N Nightingale Campus
2 Murray Street

T Teraulay
51 Teraulay St.

W Toronto Western
Hospital Campus
399 Bathurst Street



1·13
5-685